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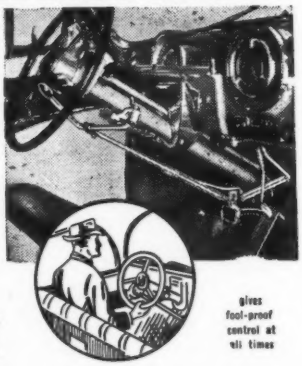
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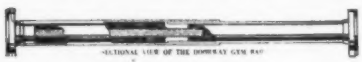
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# THE WASHINGTON CONVENTION

ROGER H. WESSEL*

The Seventh Annual Convention of the Association for Physical and Mental Rehabilitation, held at the Hotel Mayflower, Washington, D. C., June 20-24 marked another significant milestone in the development of the field of Corrective Therapy. A series of outstanding clinical sessions of a very high professional caliber, daily demonstrations of therapeutic techniques, a special exhibition room devoted to photographic reproduction of corrective therapy in action, and a tasteful display of scientific and commercial exhibits all combined to provide large daily gatherings of doctors, therapists, and professional personnel alike with a striking and convincing demonstration of the progress which has been achieved in the brief span marking this new profession's existence.

This year's meeting was dedicated to the theme, "Rehabilitation: Integrating Science and Service" and was designed primarily to present the rationale, principles, and techniques of Corrective Therapy and their application to basic medical problems involved in the treatment of the physically disabled and mentally ill. A comprehensive program covering all phases of corrective therapy treatment in GM&S, neurological, and psychiatric areas was organized under the direction of Dr. John E. Davis, Program Chairman. Many of this country's outstanding leaders in the fields of Neurology, Physiatry, Psychiatry, and Psychology accepted invitations to act as chairmen or members of the many panels which formed the nucleus for the presentation of the scientific material at the meeting. The general administrative plan for the panels called for a chairman who introduced the speakers and the topic for discussion, one or two physicians or other authorities to present the medical or scientific background of the topic, and a corrective therapist to discuss the exercise and activity applications to the problem. The panels were invariably followed by audience participation in which members of the audience asked questions of the panel members in order to elaborate or clarify some of the problems introduced. This method frequently evoked lively discussion and one panel on Paraplegia was prolonged an additional hour and fifteen minutes because of the intense interest displayed by the audience in this particular presentation.

*Corrective Therapist, VA Hospital, Montrose, N. Y., and Editor-Elect, Journal of the Association for Physical and Mental Rehabilitation.

The central theme of the convention, "Rehabilitation: Integrating Science and Service" was developed by Vice-Admiral Joel T. Boone, Chief, Medical Director, Veterans Administration in a prepared speech before a large and enthusiastic gathering on Wednesday, June 22. Emphasizing the humanitarian and democratic bases for rehabilitation services, Dr. Boone stated, "rehabilitation is far more than a formal medical or even social discipline; it is a spiritual concept which is necessary for the realization of a refined civilization, being restricted neither to race, creed, color or nationality." He discussed the function of activity as an adjunct to definitive medical treatment and paid special tribute to the field of corrective therapy in developing programs *"through* the physical rather than *of* the physical," which have contributed considerably in meeting the rehabilitation needs of patients in psychiatric, neurological and general medical and surgical categories. In discussing the work being accomplished by corrective therapists with chronic psychiatric patients, Dr. Boone recalled the success achieved by the utilization of exercise and "the language of activity" as being especially effective therapeutic modalities since, "most chronic patients operated more effectively on an activity rather than a verbal level." He discussed the special exercise and resocialization programs developed for patients undergoing specialized forms of psychiatric treatment and the development of swimming programs to replace restraint tables and tubs in many hospitals. The effectiveness of corrective therapy in developing specialized techniques of teaching he basic skills of ambulation and self-care activities and developing treatment goals in accord with the immediate needs of the patient as a step toward an ultimate objective was discussed by Dr. Boone who stated, *"I am sure it is a source of great satisfaction to corrective therapists to realize that today, physical exercise has attained the respectability and eminence of medical status."*

The Convention opened on Monday afternoon, June 20th with a clinical session at Mt. Alto Veterans Administration Hospital devoted to the problem of the catatonic patient. A demonstration of the techniques of Paul Roland, who was one of the first to develop a scientific method of treating this very withdrawn, mute, and helpless type of schizophrenic.

Dr. Harvey J. Tomkins, Chief, Psychiatry and Neurology Division, Veterans Administration, acted as chairman of this initial meeting and introduced the

problem involved in the psychiatric treatment of the catatonic, pointing out the fact that there are approximately 20,000 of these patients in our nation's mental hospitals and that because of their extreme negativism, withdrawal from society, and lack of verbalization they are not usually amenable to the conventional methods of psychiatric treatment.

Mr. Roland, who is now a member of a special research and training unit at Downey (Ill.) Veterans Administration Hospital, presented a demonstration of his technique which is pointed initially at overcoming muteness by promoting relaxation overcoming tension, particularly of the jaw and throat muscles, and developing reassurance in the patient through verbal encouragement. After the patient is able to elicit sounds, techniques of re-educating forgotten muscles of speech are introduced and the patient is gradually brought into a program of games and educational activities to stimulate interests and promote socialization. In discussing the work of Mr. Roland, Dr. Richard L. Jenkins, Chief, Research Section, Psychiatry and Neurology Division, praised Mr. Roland's "consistent success in getting increased verbal and human response from patients who have been mute for years."

Activity therapy as a process not only in the treatment of psychiatric patients but also as an aid in diagnosis and prognosis was the theme of a panel on "Rationale for Activity Therapy" chaired by Dr. A. B. C. Knudson. In developing the theme of activity as a process. Mr. Arthur Landy stressed the value of learning through activity, the necessity for having a progression of goals for each patient in the program, and the need for constantly attempting to progress the patient to a higher level of therapy. "After a patient has been in corrective therapy for, let us say, four months, we should know that he has had four months of experience—not one month repeated four times nor one week repeated sixteen times but constant reappraisal and change in activity," said Mr. Landy.

Although Dr. Donald Munro was unable to be present to act as chairman of the panel, "Rehabilitation of Patients With Spinal Cord Injuries," Dr. Herbert Talbot and Dr. Fritz Friedland presented a concise summary of the important neurological and urological considerations in the treatment of the paraplegic which were supplemented by practical applications of exercise and ambulation techniques presented by Mr. Frank Deyoe. The panel was extended during the lengthy discussions which followed their presentation to answer all the questions from the floor. Many of these questions were of a very fundamental character — "Why should paraplegics be taught ambulation?", "How often should they ambulate?"; questions which brought out current thinking on this important subject. It appeared to be the concensus of opinion that the practicality of ambulation was an individual problem and that ambulation training should be directed toward the individual needs of the patient rather than to try to set up an ideal goal for all paraplegics. Although most paraplegics depend primarily on wheel chairs for locomotion, ambulation is important for physiological reasons and for providing the patient with a practical means of maneuvering in areas not suitable for wheel chairs, the panel agreed.

The panel on "Activity for the Regressed Psychotic Patient" discussed the psychodynamics of personality regression and pointed out the limitations imposed on the psychiatrist and psychologist in treating non-verbalizing patients. Dr. J. Arthur Waites stated that such types of patients expressed themselves primarily on a "tactile" or "mobile" level rather than through verbalizations and suggested modified corrective therapy activities as one method of approaching regressed patients. In discussing the application of corrective therapy to the problem, Mr. Frank Marusak explained some of the techniques and principles used in developing a non-verbal approach based on satisfying the patient's infantile needs and how the therapist, through controlled situations, is frequently able to advance the patient to higher forms of activity.

The panel on "Normal Self Care Activities," chaired by Dr. Arthur S. Abramson, was unique in that it offered papers concerning areas not commonly associated with corrective therapy. Miss Margaret Hitt of Murfreesboro, Tenn. described methods of reactivating regressed mental patients, employing rhythms and dancing fundamentals, which she has found to have considerable merit and Mr. Howard E. Joy of Wood, Wisconsin, discussed some of the principles and psychological approaches used in corrective therapy for the blind.

The "Social Rehabilitation of the Patient" was a panel in which the importance of the social case worker in helping to see the patient through from reception to separation and to preserve the treatment results gained in the hospital were discussed. Some of these same problems on the community level were discussed in a panel chaired by Dr. Leonard A. Scheele, Surgeon-General of the U. S. Public Health Service. Dr. Scheele emphasized in his presentation that although education of the general public in rehabilitation and in accepting physically and mentally disabled persons for independent community life is important, "no amount of general understanding and good will can substitute for specific acceptance of responsibility on the part of lay groups in the community." Mr. Kenneth Pohlmann, rehabilitation consultant of the United Mine Workers Wel-

fare and Retirement Fund, reported statistically on the benefits of rehabilitation services to 169 injured mine workers and stated, "relief or charity are dead-end solutions, accomplish little or nothing, and can, over a long period of time, adversely affect an individual and his family."

A very practical discussion of ambulation of orthopedic patients was presented by the panel devoted to this important subject. Mr. Joseph Phillips discussed braces, prostheses, and walking casts, including some common complaints of amputees which cause poor gaits and discomfitures and how, in most cases, these complaints can be corrected.

Dr. Winthrop Morgan Phelps, Medical Director of the Children's Rehabilitation Institute, Baltimore, Maryland, and one of the nation's leading experts in the field of cerebral palsy, presented an orientation on the cerebral palsied child, discussing the causes and physical aspects involved in treating the various types of this disease. "Instead of being muscularly built up," he stated, "the cerebral palsied need to have their muscles toned down." Dr. Phelps stated that the ataxia type of patient was "the most treatable" and advised training in conscious balance and the conscious use of the eyes to gain balance for ataxic patients.

The panel on "Developmental Aspects of Curricula and Training in Corrective Therapy" was presented primarily by educational leaders who stressed the improvement in current curricula and the teaching of additonal medical topics for the functional application of exercise and activity as significant developments in the trend of providing corrective therapists with a sound background for professional accomplishment.

In addition to the many panels presented, a number of individual papers were read. Dr. J. Q. Holsopple and Mr. Paul Fleer discussed research techniques in relation to corrective therapy and offered a number of practical suggestions for work in this important area. Dr. Holsopple stated, "there is no reason why the corrective therapist should not enter into research. There are many reasons why he should. To do so he should ally himself with those who are working in related areas and whose techniques may be useful to the corrective thereapist. He needs a clean statement of his problem, controlled experiments and sound statistics. He must undertake research without undue bias and drive steadily toward his goal."

Clinical demonstrations at the Convention were presented by Dr. A. Ray Dawson, Chief, P.M.R.S., Richmond Veterans Administration Hospital, Sam Burchart Chief C. T. and Paul Pastor, also of the Richmond staff. The demonstrations, which showed some current methods used in the physical maintenance of the quadriplegic, were of considerable interest to the assemblage and point the way toward an expanded program of visual aids at future clinical sessions.

The scientific exhibits held in the Pan-American Room were perhaps the most impressive photographic display of corrective therapy activities yet assembled. The room was arranged as a gallery with large, well mounted, and attractive photographs from a total of eleven hospitals pictorially demonstrating the scope of the program in neurological G M & S, and psychiatric areas. The commercial exhibits were tastefully grouped in the Chinese Room and featured the latest in exercise and rehabilitation equipment.

The climax of Convention Week occurred on Thursday, June 23 when the annual association banquet was held. With the ebullient Dr. Thomas A. Arnett, Area Medical Director, Veterans Administration Regional Office, acting as toastmaster, a large and enthusiastic gathering of members and invited guests, including Congresswoman Edith Nourse Rogers, who heads the House Veterans Affairs Committee, and Admiral and Mrs. Boone, heard Congressman Walter H. Judd (Rep. Minnesota) deliver a stirring and memorable address entitled, "The Human Story of Rehabilitation." Congressman Judd, formerly a medical missionary in China, paid tribute to people in the rehabilitation field and then went on to discuss the cultural clashes which permeate the world today and the dangers of Communism.

The story of the seventh annual convention is one of professional competence and a high standard of quality and much credit is due to Dr. John E. Davis and Mr. Thomas Zwierlein who co-chairmaned a meeting which will be long remembered. In summing up the Convention, the following specific accomplishments are cited:

(1) The program presented a comprehensive survey of the corrective therapist's activities in relation to the treatment of patients in a wide range of categories. Not only the immediate field was described but also some of the potentialities for the employment of corrective therapists in relatively new areas was effectively demonstrated.

(2) Significant progress was apparent in the professional quality of the papers presented by corrective therapists. A total of seventeen therapists took part in panel discussions during the meeting.

(3) Clinical demonstrations under Dr. A. Ray Dawson provided an excellent educational medium for the teaching of treatment techniques as performed by corrective therapists.

(4) Significant papers tracing the development of progressive corrective therapy techniques in the treatment of psychiatric patients opened new ave-

nues for further study in this important area. Present attempts to fit activity into the overall aims of dynamic treatment were clearly indicated in the papers by Mr. Landy and Mr. Marusak.

(5) The importance of motivation, its psychology and methods of application received considerable attention at the clinical sessions, emphasizing the interest displayed by therapists in establishing rapport and good inter-personal relationships with the patients under treatment.

(6) The active interest displayed by the audience throughout the course of the meetings was particularly stimulating and pointed a definite trend toward the introduction of the forum type of discussion in future conventions.

(7) Continued intensification of corrective therapy techniques in developing specific methods and specializations in neurological, psychiatric, and general medical and surgical areas is clearly indicated and the important place that medical authorities are ascribing to activity should serve as a spur toward future endeavors.

(8) The broad philosophies and concepts of corrective therapy have won wide general acceptance among therapists now active in the field, thus providing a strong foundation upon which to build a more distinct science.

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# THE PAINFUL SHOULDER GIRDLE

AARON M. LEFKOVITS, M.D.*

Pain and stiffness accompanied by varying degrees of functional impairment of the shoulder region and upper extremity are frequent complaints and are commonly the cause of considerable morbidity and disability. Full range of motion in the shoulder depends upon the harmonious and integrated movement occurring simultaneously in three separate joints, the scapulohumeral, the acromioclavicular, and the sternoclavicular articulations and, in addition, upon the gliding mechanism between the scapula and posterior thoracic wall. Each of these joints is capable of independent motion; normally, however, they function together as a single unit and produce what Codman aptly called "the scapulohumeral rhythm."[1] It is for this reason that this article is entitled "shoulder girdle" rather than shoulder joint.

To adequately understand the complex functions of the shoulder girdle, to diagnose its lesions more accurately, and to treat them more successfully, a working knowledge of its anatomy and physiology is absolutely necessary.

## BONES OF THE SHOULDER GIRDLE

The bones comprising the shoulder girdle are: the scapula, clavicle, and the head of the humerus. The scapula forms the posterior part of the shoulder girdle; it is a flat, roughly triangular bone and is suspended from the cervical and thoracic vertebrae by the levator scapulae, rhomboids, and trapezius muscles and attached to the thoracic wall and humerus by numerous ligaments and the serratus anterior, pectoralis minor, teres major, deltoid, coracobrachialis, biceps, triceps and the rotator group of muscles—supraspinatus, infraspinatus, teres minor and subscapularis. The lateral border of the scapula is thicker; at its upper end it presents a shallow, pear shaped articular surface, the glenoid cavity, which articulates with the head of the humerus. Over the upper part of its dorsal surface the scapula presents a prominent plate of bone, the spine, which crosses the scapula obliquely and laterally ending in the prominent triangular acromion process. Anteriorly the coracoid process projects from the scapula forward and lateralward. Except through its articulation with the clavicle at the acromion process, the scapula is free of any bony attachment to the avial skelton. The scapula articulates with the humerus at the glenoid cavity and with the clavicle at the acromion process. The acromion process overhangs and protects the head of the humerus from above and behind and forms the outer bony part of the coraco-acromial arch. The coracoid process partially overhangs the head of the humerus anteriorly, is connected with the acromion by the coraco-acromial ligament and with the outer third of the clavicle by the strong coracoclavicular ligament (Figures 1 and 2). Normally, during elevation of the upper extremity the greater tuberosity of the head of the humerus glides with ease under the acromion and the coraco-acromial arch. The scapula can be likened to a bony platform which serves for the attachment of muscles, and which in turn greatly increases the mobility of the upper extremity.

The clavicle is a long bone, curved at both ends; it extends horizontally at the upper anterior part of the chest just above the first rib. Medially, it articulates with the manubrium sterni and the first rib and

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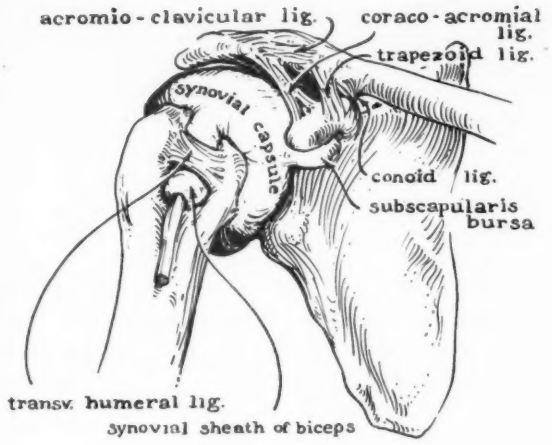


Fig. 1.

laterally with the acromion process of the scapula. Thus, it possesses joints at both ends and is capable of considerable motion rendering assistance during complete elevation of the upper extremity.

The upper end of the humerus consists of a rounded head, a constricted portion called the neck by which the head joins the shaft of the humerus and two eminences, the greater and lesser tuberosities. The tuberosities are separated by the intertubercular groove, also called bicipital groove, which lodges the long head of the biceps brachii muscle.

## JOINTS OF THE SHOULDER GIRDLE

The Scapulohumeral joint is a ball and socket joint and is formed by the articular surfaces of the glenoid cavity of the scapula and the head of the humerus. The glenoid cavity is shallow; it is deepened by the labrum, a fibrocartilagenous structure, which is attached to the periphery of the glenoid. The long head of the biceps originates at the supraglenoid tubercle and is continuous with the fibers of the labrum. The articular capsule completely surrounds the joint; it is loose, redundant, and allows great freedom of movement (Figure 2). It is strengthened by the coracohumeral ligament and the musculotendinous cuff; inferiorly, the capsule is strengthened only during abduction of the arm when the teres major and latissimus dorsi partially cover it. The tendon of the long head of the biceps brachii passes through the capsule; a layer of synovial membrane surrounds the tendon and is reflected over the intertubercular groove in such a manner that while the tendon passes through the joint, it is not contained within the synovial cavity. The joint is protected by the rotator muscles which are closely applied to the capsule and to the arch formed by the coracoid process, the acromion and the coraco-acromial ligament. Movements in the joint are limited by the rotator muscles, ligaments, tuberosities and the overhanging coraco-acromial arch.

The acromioclavicular joint is an arthrodial joint between the acromion of the scapula and the lateral end of the clavicle. Not infrequently an articular disk separates the articular surfaces and two synovial cavities are present in the joint. The joint is strengthened by the acromioclavicular, coracoclavicular and coracoacromial ligaments. Normal functioning of this consists of a gliding motion of the articular end of the clavicle on the acromion and rotation of the scapula forward and backard upon the clavicle, thus greatly increasing the range of motion in the shoulder girdle. Displacement of the joint is prevented by the acromioclavicular, coracoclavicular and coraco-acromial ligaments.

The sternoclavicular joint is a double arthrodial joint and is formed by the medial end of the clavicle and the upper lateral part of the manubrium of the sternum and the cartilage of the first rib. An articular disk divides the joint into two cavities, each of which is lined by synovial membrane. This arrangement permits the joint to function as a ball and socket joint so that a limited amount of motion is possible in almost every direction. The disk also functions as a shock absorber and protects the sternum from the impact of forces directed to the trunk through the upper extremities. The interclavicular, costoclavicular and sternoclavicular ligaments help prevent disclocation of the joint.

The gliding mechanism between the scapula and thoracic wall acts functionally as a joint and provides considerable range of motion of the scapula in all directions and assists in the movements of the upper extremity at the shoulder joint. In instances of ankylosis of the glenohumeral joint, motion of the scapula upon the thoracic wall compensates to a great extent for loss of motion in the shoulder girdle.

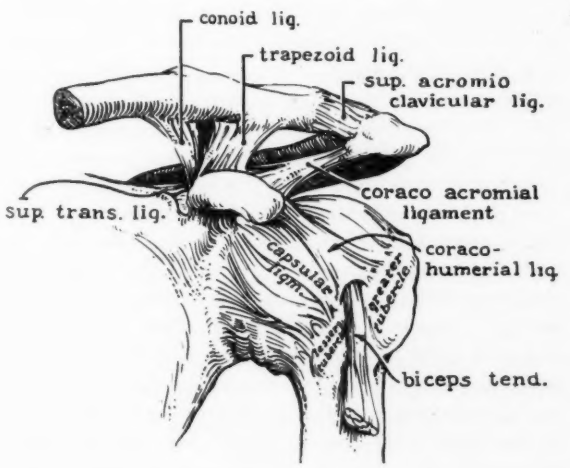


Fig. 2.

There are three structures which are of special importance in the normal functionings of the shoulder girdle. These are the (1) musclotendinous cuff, (2) the subacromial bursa and (3) the coraco-acromial ligaments.

## THE MUSCULOTENDINOUS CUFF

The supraspinatus, infraspinatus, teres minor and subscapularis muscles end in broad flat tendons which unite and form a musculotendinous cuff, the fibers of which intimately unite and interlace with those of the capsule of the shoulder joint. This structure is also called "the rotator cuff," and functions as a suspensory ligament for the head of the humerus. According to DePalma, beginning with the fifth decade of life, marked degenerative changes and gradual progressive recession of the cuff take place with advancing age.

The subacromial bursa and loose areolar tissue serve as a gliding mechanism between the superficial and deeper layers of muscles of the shoulder girdle. It is a large bursa and is prolonged laterally under the deltoid as the subdeltoid bursa and medially under the coracoid to become the subcoracoid bursa; its roof is adherent to the under surfaces of the acromion and coraco-acromial ligament and is attached by its base to the outer surface of the musculotendinous cuff and upper and outer parts of the greater tuberosity. When the arm is abducted, the bursa is almost completely subacromial; during adduction of the arm it is subdeltoid in location.

The coraco-acromial ligament is a strong triangular band; together with the coracoid process and acromion it forms a strong arch which protects the head of the humerus.

The muscles about the shoulder joint are arranged in two layers or sleeves which are separated by the subacromial bursa; the inner layer is made up of the four rotator muscles while the outer layer is composed of the deltoid and teres major muscles.

A detailed discussion of the precise function of each muscle or muscle group, bone and joint in the scapulohumeral rhythm is beyond the scope of this article. found in the published works of previous investigators.[2,3,4] Suffice it to state here that there are still wide gaps in our knowledge of the normal functioning of the shoulder girdle and differences of opinion exist regarding the exact role of each individual structure comprising this region of the body. Most observers agree, however, that while each individual structure is capable of independent motion, there is a harmonious interplay of all the separate components of the shoulder girdle and that the simultaneous interaction of these elements results in a smooth synchronous movement of the upper extremity in relation to the trunk of the body.

It must not be forgotten that normally considerable variations are found in the anatomy of the structures entering into the formation of the shoulder girdle. It is also important to remember that physiologic aging of these structures occur normally and that a gradual and progressive degeneration of all these structures has been noted to take place from the fourth or fifth decade onward and that these degenerative changes are more marked and more extensive in successive decades. These changes were described in detail by DePalma.[2] Briefly, these changes consist in uneveness, fibrillations, the appearance of furrows, pits, erosions and marginal proliferations of the articular cartilages; thinning, surface irregularities and partial detachment of the glenoidal labrum; villous proliferations, fringe and tab formations in the synovial membrane; tears of varying depth and extent, recession, thinning and deposition of calcium in the musculotendinous cuff; shredding, thickening with widening of the biceps tendon; thickening, adhesions, calcificatons and varying degrees of obliteration of the subacromial bursa; variations in the size and depth of the bicipital groove and excrescences and spurs over the tips of the tuberosities of the humerus and along the bicipital sulcus.

## LESIONS INVOLVING THE SHOULDER GIRDLE

Considerable variations exist in the terminology applied to designate the lesions affecting the shoulder girdle. Some of the terms found in the literature are: bursitis, non-calcific tendinitis, non-calcific synovitis, tears of the musculotendinuous cuff, humeroscapular bursitis, adhesive capsulitis. adhesive or obliterative subdeltoid bursitis, tenosynovitis of the long biceps tendon, rupture of the supraspinatus tendon, periarticular fibrositis, frozen shoulder, calcific supraspinatus tendinitis, shoulder-hand syndrome, etc.

In my experience it is often difficult to establish a precise diagnosis and to name the particular structure involved in any indvidual patient with a painful shoulder girdle. Similarity in the clinical features presented by the great majority of patients and their response to identical therapeutic measures rarely permit the designation of the specific component in the shoulder girdle which is responsible for the complaints of these patients. For these reasons we have employed the following diagnostic terms, modified after those established by the National Conference on Nomenclature of Disease, published by the American Medical Association.[5]

(1) Periarticular fibrositis: to designate lesions believed to be due to local affections either of the bursae, musculototendinous cuff or muscles and ligaments which on roentgenographic examination do not reveal calcium depositon.

(2) Periarticular fibrositis with calcification: to

designate lesions described in (1) and in which, in addition, calcification can be demonstrated by x-ray.

(3) Bicipital tendonitis: to designate lesions which on the basis of physical findings are believed to be confined to the tendon of the long head of the biceps muscle.

(4) Shoulder-Hand syndrome: to designate these patients in whom varying vasomotor manifestations in the hands are found in association with lesions in the shoulder.

(5) Rheumatoid arthritis: to designate articular and periarticular involvement of the joints of the shoulder girdle as part of the systemic disease, rheumatoid arthritis.

(6) Lesions of the shoulder girdle believed to be due to some abnormality of the vertebral column, central or peripheral nervous system or viscera. In these instances the involved organ responsible for the referred pain in the shoulder girdle is named as the primary causative factor while the lesion in the shoulder girdle is designated as secondary to it.

This presentation is limited to the discussion of periarticular fibrositis with and without calcification and the shoulder-hand syndrome.

## ETIOLOGY

The causes of pain in the shoulder girdle are many. They are listed elsewhere[6] and will not be repeated here. Most observers believe that the degenerative changes which take place in the structures of the shoulder girdle as age advances and which were briefly described above play an important role. Partial or complete tears and ruptures are commonly found in the musculotendinous cuff.

Wherever there is damaged tissue, calcium deposition takes place readily. This is undoubtedly the reason for the fact that pain in the shoulder girdle is most commonly observed in individuals in the fourth decade and older. The fact that the upper extremity is prehensile, that it possesses a wide range of motion and is almost constantly in use during the individual's waking hours leads to ready understanding of the frequency of pain in this region. The relationship of the head of the humerus and the musculotendinous cuff to the subacromial bursa and coraco-acromial arch during elevation of the upper extremity predisposes these structures to oft repeated minor trauma leading to the development of degenerative changes in time. The findings at operation or post-mortem examination of the shoulder girdle attest to the fact that the pathologic changes in the structures of this region are due to attrition and trauma rather than to inflammation. Additional evidence pointing to the role played by attrition and degenerative changes incident to the constant wear and tear of these structures in the etiology of the painful shoulder girdle is the fact that these complaints occur more frequently in individuals engaged in certain occupations, such as farmers, typists, automobile mechanics, violinists, etc. Many of these individuals assume improper postures while standing or sitting during working hours and during rest, habitually slouch forward, thus altering the normal relationship between the scapula and thoracic wall and between the head of the humerus and glenoid cavity. Improper posture leads to fatigue and pain which characteristically occur several hours after beginning the day's work. Some persons develop faulty postural attitudes in bed by sleeping on several pillows and/or abducting the arm to the horizontal position with the hand placed under the neck or cheek. These individuals often complain of severe occipital headaches and pain in the cervical region in addition to pain in the shoulder girdle. These complants are especially severe on awakening and gradually diminish during the day as activity is resumed. Immobilization of the upper extremity and non-use of the shoulder girdle for whatever reason are important contributing factors as was emphasized by Ghormley.[7] Such immobilization as employed incidentally in the treatment of traumatic or inflammatory lesions of any part of the upper extremity, or the immoblization which is incidental in patients who are confined to bed for prolonged periods of time for the treatment of myocardial infarction, cerebral hemorrhage, congestive heart failure, some infectious process of prolonged duration or who are bedridden postoperatively for long periods of time. Immobilization causes stiffness which in turn causes pain on attempt at motion of the upper extremity. This induces guarding and more immobilization. Thus a vicious cycle is established, resulting eventually in severe forms of disabilities in the shoulder girdle. The complaints referable to the shoulder girdle usually persist for long periods of time after the original condition, which necessitated bed rest, had been adequately controlled or healed. Preventive measures in the form of early mobilization of the upper extremity applied judiciously early in the course of treatment of the above-mentioned conditions, maintaining proper posture during working hours and sleep is surprisingly successful in preventing the development of morbidity resulting from a painful shoulder girdle.

Recently, several authors called attention to the role played by emotional factors and stressful life situations in the development of painful shoulder.[6,8] Many of these individuals have a lowered threshold to the annoyances of everyday living, harbor resentment which they are unwilling or unable to express openly. Coventry[6] described these individuals as having a "periarthritic personality" and believed that "the occurrence of periarthritis is dependent on disuse and the presence of a periarthritic personality."

## CLINICAL FEATURES

The onset of disability in the shoulder girdle is usually insidious. As a rule the individual becomes aware of aching in the region of the shoulder girdle in the morning on awakening, after some unaccustomed physcal exertion on the previous day, excessive use of the upper extremity, or for no obvious reason. The pain is often not well localized although on careful palpation of the shoulder girdle region, one or more tender areas can usually be found. The aching is generally accompanied by some stiffness but it is not incapacitating and the individual is able to carry on his usual occupation. Gradually, however, the aching and stiffness increase progressively during successive days or weeks until varying degrees of incapacity occur. The pain becomes more or less continuous, is almost always aggravated on use of the arm and during inclement weather, and there is frequently radiation of pain along the lateral or less frequently the medial aspect of the upper extremity down to the elbow or even as far as the tips of the fingers. Frequently, the pain radiates toward the neck, the occiput or the scapula. Some patients complain of numbness, tingling, and coldness of the fourth and fifth fingers or the thumb and second and third fingers. At times, the pain and stiffness are more severe at night while lying in bed; some of these patients obtain relief by elevating the arm and placing their hands under the neck or face. In a few, the pain is severe and throbbing "like a toothache," keeping the patient awake; some of these patients are often unable to remain in the recumbent position, spend the night sitting in a chair or pace the floor through most of the night. Heat applied locally relieves the pain and discomfort in the majority of patients. Rarely, an ice bag is found to afford a greater measure of relief. Less characteristically, the onset is sudden; in these instances a history of sudden onset of severe pain during physical exertion may frequently be obtained. These patients often complain of excruciating pain in the shoulder girdle with shooting pains radiating down the arm.

Examination: On inspection, only rarely can any abnormality be discerned. In the occasional case of very acute onset, slight swelling, increased heat and redness may be noted over the involved shoulder. Usually the patient holds the elbow of the involved upper extremity in close contact with his chest guarding it against any jar or sudden movement. On deep palpation, trigger zones can generally be found over the anterior and/or lateral aspect of the upper part of the greater tuberosity of the humerus. Trigger zones can also be found over the trapezius just above and medial to the spine of the scapula and along the vertebral border of the scapula. Occasionally the radiating pain of which the patient complains can be reproduced by pressure exerted over one or more of these trigger zones. At times, areas of hypesthesia can be found along the medial or lateral aspect of the upper extremity; generally, however, these areas of hypesthesia cannot be well outlined and only rarely follow the known anatomic distribution of dermatomes. In long standing cases, varying degrees of atrophy of the supraspinatus, infraspinatus, and deltoid muscles occur. In the more severe cases there is, in addition, generalized atrophy of all the muscles of the involved upper extremity. Movements in the joints of the shoulder girdle are restricted in different degrees varying from no restriction to very marked limitation of motion in all the joints, but chiefly in the glenohumeral articulation. Many of these patients are markedly disabled, do not have more than a few degrees of motion in the glenohumeral articulation, and present the clinical picture often referred to as the "frozen shoulder." Roentgenograms usually reveal no abnormalities in the early cases, although calcification has been noted on occasion in acute cases. In instances of longer duration, slight irregularities and sclerosis in the region of the greater tuberosity of the humerus with or without calcification in the adjacent soft tissues and osteoporosis can be found. Patients who have the shoulder-hand syndrome, present in additon to the above findings, generalized puffiness or swelling of the hand with moderate generalized edema of the soft tissues, or in cases of long duration, varying degrees of atrophy, thinning of the subcutaneous tissues and skin—the latter appearing smooth and shiny with obliteration of the wrinkles and creases. These patients usually complain of numbness, coolness and aching of varying intensity in the finger tips. The range of motion in the phalangeal joints is moderately limited and the fingers are held in slightly flexed position.

## CASE REPORTS

The following cases illustrate some of the features seen in patients with painful shoulder girdle and the methods of treatment employed on the Rheumotology Section of the hospital. For the sake of brevity, only the abnormal findings referable to the shoulder girdle and cervical spine will be described.

*Case* 1. A 31 year old refrigerator engineer developed constant dull aching pain in the neck, right shoulder and arm ten days prior to admission after having been exposed to sulfur dioxide gas. The pain was constant, radiated down the right upper extremity and was aggravated on turning his head. He had a similar episode in the left shoulder region three years ago. On examination, there was tenderness over the right sternocleidomastoid mucle, pain on flexion and rotation of the head, and a trigger zone was present over the right trapezius just above and medial to the spine of the scapula. There was no limitation of mo-

tion of the arm. Roentgenograms of the shoulders and cervical spine revealed no abnormalities. Treatment: The trigger zone was infiltrated with 2% procaine solution. There was immediate relief of patient's complaints and he was discharged from the hospital.

Comment: This patient had periartcular fibrositis. Procaine infiltration of the trigger zone resulted in prompt relief.

*Case* 2. A 55 year old farmer has had pain in the right shoulder intermittently for two years. The episodes of pain varied in intensity; at times they were so severe that he was totally incapacitated. Examination revealed tenderness on pressure over the anterior aspect of the upper end of the right humerus and over the right trapezius muscle just medial and above the spine of the scapula. Abduction of the right arm was limited to about 55 degrees, forward flexion to about 95 degrees. No heat or swelling was present over the shoulder region. Roentgenograms of the right shoulder showed calcium deposits regional to the greater tuberosity of the humerus. The cervical spine showed narrowing of the disk between the fifth and sixth cervical vertebrae and considerable encroachment upon the fifth and sixth intervertebral foramina. Treatment consisted of injecting the trigger zone with 2% procaine solution, moist air cabinet therapy, followed by active exercises of the right upper extremty and Sayre head traction. Patient obtained marked relief of symptoms and regained normal range of motion in the right shoulder girdle.

Comment: This man had periarticular fibrositis with calcification. The calcium deposition was probably in the supraspinatus portion of the musculotendinous cuff. Because of the degenerative changes in the cervical spine, Sayre head traction was employed in addition to the treatment of the shoulder region.

*Case* 3. A 55 year old barber had a "cold" and cough two weeks prior to admission. Four days later he developed severe pain on motion in the left shoulder. The intensity of pain increased gradually and two days prior to admission became excruciating and began to "shoot" down the anterior espect of the left arm on any movement of the arm or hand. He had slight fever. When examined, the patient guarded the left upper extremity by supporting it at the elbow with the right hand and limited all motions at the scapulohumeral joint. There was slight edema and marked tenderness over the subacromial region and above the superior border of the scapula. X-rays showed calcfic deposits in the soft tissues of both shoulders, regional to the greater tuberosity of the humerus. The cervical spine showed minimal degenerative changes. Treatment: The trigger zonés were infiltrated with 2% procaine solution. Deep x-ray therapy was given to both shoulders as well as infrared and massage and active and active-assistive exercises of both arms. Patient's response to those therapeutic measures was excellent; he became asymptomatic and regained normal range of movement in the shoulder.

Comment: This man had periarticular fibrositis with calification. It is to be noted that x-rays showed calcium deposits in both shoulders, yet the patient had symptoms only in the left shoulder. The x-ray demonstration of calcium deposits in shoulders which are entirely asymptomatic is not an infrequent finding. This patient also illustrates the prompt response to x-ray therapy which can be obtained in the majority of patients who have acute periarticular fibrositis with calcification.

*Case* 4. The patient, a 58 year old farmer, one year prior to admission developed pain in the left shoulder. The pain was worse on motion and gradually and progressively increased in intensity until he was "hardly able to use the left arm." On examination, the left shoulder was partially "frozen" with marked limitation of motion in the shoulder girdle, moderate atrophy of the muscles of the extremity was noted, and point tenderness was present over the anterior aspect of the greater tuberosity of the left humerus. X-rays showed osteoporosis of the head and upper part of the left humerus and irregularity of the inferior portion of the glenoid fossa. Sclerotic changes were noted in the lower cervical vertebrae. The patient was treated with physiotherapeutic measures; namely, local heat and active and assistive exercises; a trigger zone was infiltrated with procaine. He obtained slight relief from these measures. Cortisone was then administered intramuscularly. Thereafter there was rapid and progressive improvement. The pain disappeared and patient regained 85 to 90% of normal function in the left shoulder girdle.

Comment: This case illustrates the good results that can be obtained from parenterally administered cortisone. The drug is given in doses of 100 mg. intramuscularly daily for the first three to seven days, then it is decreased gradually during the course of two to three weeks or until the patient's complaints subside. Cortisone administered in this manner has been found to be a very effective method of therapy of these patients, especially when combined with physiotherapeutc measures and infiltration of trigger zones with procaine.

*Case* 5. This 46 year old auto mechanic and body and fender worker in 1942 developed episodes of acute aching pain, stiffness and swelling in the right shoulder. These episodes recurred intermittently at intervals of a few weeks to several months and lasted from two to several weeks at a time. He was treated in many hospitals and by numerous physicians by physiotherapeutic measures and salicylates. For one year prior to admission to this hosptal, the pain, stiffness

and swelling of the right shoulder persisted constantly and were accompanied by spotty type of pain in both upper extremities, swelling of the right hand and numbness and tingling of the finger tips of the right hand. When examined, the patient appeared depressed, somewhat resentful, and he held the right upper extremity in the adducted position, immobilized at the side of his body, did not use the right hand while undressing himself and did not swing the right upper extremity while walking. Passively, the right arm could be flexed forward and backward through an arc of approximately 60 degrees and abducted to an angle of about 25 degrees. He complained of marked tenderness on pressure over the bicipital groove and greater tuberosity of the humerus with radiation of pain diffusely over the right shoulder region and along the dorsolateral aspect of the right upper extremity down to the fingers. There was generalized atrophy of slight degree of all the muscles of the entire right upper extremity. The skin of the hand was slightly cyanotic and the subcutaneous tissues of the fingers, hand and wrist were moderately and uniformly swollen. The grip of the right hand was weak. Diminished perception of pin-prick of spotty distribution was present over both upper extremities. There was pain on pressure along the right side of the lower part of the cervical spine and pain in the neck on bending the head toward the right side. The range of motion of the cervical and dorsolumbar spines and left upper extremity was approximately normal. Psychologic tests indicated that the patient found it rather difficult to express his aggression externally and directed it inwardly against the self. He was making desperate efforts to meet everyday stress situations with conventional modes of behavior and attempted to minimize or gloss over frustrating situations by conforming to them and to avoid placing blame upon others in the hope that time or circumstances will bring about a satisfactory solution to problems. This lack of ability to express his aggression outwardly was apparently manifesting itself through psychosomatic complaints. His labile emotionality would add to this type of solution. X-rays showed calcium deposition in the soft tissues regional to the greater tuberosity of the humerus and slight osteoporosis of the head of the humerus. The cervical spine showed narrowing of the disks between the fifth and sixth and between the sixth and seventh cervical vertebrae with encroachment upon the intervetebral foramen between the sixth and seventh cervical vertebrae. Treatment: The trigger zones over the anterior and lateral aspect of the upper end of the right humerus were injected with 2% procaine solution. Dihydrocortisone, 25 mg. on one occasion and 50 mg. on another occason, was injected into the scapulohumeral joint. He was also treated in moist-air cabinet, followed by active exercises of the right upper extremity and Sayre head traction. In addition he was given deep x-ray therapy. The patient improved gradually. At the time of discharge from the hospital he had slight pain in the right shoulder region only at the extremes of motion; the range of the motion in the shoulder girdle had increased considerably and he was able to abduct the arm to the horizontal level; forward and dorsal flexion of the right upper extremity were of normal range. There was only minimal swelling of the right hand. The grip of the right hand was almost of normal strength.

Comment: This patient had periarticular fibrositis with calcification and the shoulder-hand syndrome. He manifested marked functional overlay and the so-called periarthritic personality. At first he was quite refractory to treatment and responded only to the employment of various therapeutic measures administered continuously during the course of nine weeks. This case also illustrates the employment of intra-articular injections of hydrocortisone, generally a very effective method of therapy. The drug is injected intra-articularly or into the periarticular tissues in doses of 25 to 50 mg. at four to seven day intervals, the frequency of injections depending upon the return of the patient's symptoms. As a rule, the majority of patients respond to one or two injections. More than two injections are rarely needed.

*Case* 6. Five months prior to admission this 57 year old printer had infarction of the posterior wall of the myocardium. A few days later he developed pain on motion in the right shoulder accompanied by weakness of the right arm, swelling of the right hand and hypesthesia of the skin of the hand. One month later he developed, in addition, pain and marked limitation of motion in the left shoulder region accompanied by swelling and weakness of the left forearm and hand and contracture of the palmar fascia of the left hand causing partial flexion of the fingers. One month prior to admission the symptoms in the right shoulder and upper extremity began to decrease and he had gradually increasing range of motion in the right shoulder girdle. Examination: The entire left upper extremity appeared flabby and edematous and the subcutaneous tissues over the left wrist and hand were slightly swollen. There were moderate atrophy and weakness of the muscles of the left upper extremity and the fingers of the hand were held slightly flexed.

The range of motion in the left shoulder girdle and in the joints of the left hand and wrist was markedly limited. The left biceps tendon reflex was decreased. The range of motion in the right shoulder girdle was moderately decreased, and a trigger zone was present over the middle of the right scapula just below the spine of the scapula X-rays showed patchy osteoporosis of the bones forming the glenohumeral joints, the

wrists and hands. The cervical spine showed decrease of the joint space between the fifth and sixth cervical vertebral bodies with encroachment upon the corresponding intervertebral foramen. Treatment consisted of hydrotherapy in a Hubbard tank, followed by active and active-assistive exercises and reeducation of the weakened muscles. The left hand was fitted with a radial nerve type splint and the patient was given occupational therapy. He improved gradually during the course of four months; the pain in the shoulder girdles disappeared almost completely, the range of motion in the shoulder girdles increased considerably and with the exception of the left extensor carpi ulnaris, extensor digitorum communis, abductor and extensor pollicis longus, and the left biceps, the muscles of the left upper extremity were appreciably stronger.

Comment: This patient illustrates the development of periarticular fibrosits with the shoulder-hand syndrome which has been reported to follow as a complication in about 10 to 20 percent of cases of coronary occlusion with myocardial infarction.[9] Generally, the development of the shoulder-hand syndrome in these patients is believed to be result of reflex sympathetic dystrophy. The enforced bed rest of these patients with consequent immobilization of the upper extremities in the immediate post-infarction treatment period is probably the precipitating factor. These patients respond to treatment very slowly and often only after the employment of several therapeutic measures. Some observers advocate blocking and/or surgical extirpation of the appropriate sympathetic ganglia.[10]

## DISCUSSION

These six cases were selected to illustrate the therapeutic management and the usual clinical pictures presented by patients whose chief complaint is a painful shoulder girdle. Consideraton of the etiological factors leads one to believe that the avoidance of prolonged immobilization of the upper extremity under all circumstances and the correction of faulty postural habits play a very important role in the prevention of the painful shoulder girdle. The frequent finding of X-ray evidence of degenerative changes in the lower cervical spine merits special comment. Such changes are found not infrequently in individuals of 50 years of age and older. By far, the largest majority of these persons do not have complaints referable to the shoulder girdle. It appears, therefore, that such changes in the cervical spine, unless accompanied by definite subjective and objective manifestations of cervical radiculitis, is of doubtful clinical significance Moreover, from the x-ray appearance alone, it is extremely difficult to correctly evaluate the extent of encroachment by osteophytes upon the intervertebral foramina and to determine whether the nerve roots are compressed by these osteophytes. In my experience, however, better therapeutic results are obtained when both the shoulder girdle and cervical spine are treated simultaneously as described in the case reports.

At the present time the utilization of cortisone parenterally and hydrocortisone intro-articularly and/or periarticularly has improved our therapeutic results considerably and we are now able to offer our patients much greater relief of their misery than heretofore.

## SUMMARY

1. A brief general discussion of the anatomy and physiology of the shoulder girdle is presented.

2. The clinical features and therapeutic management of six patients with varying forms of periarticular fibrositis of the shoulder girdle are described in detail.

3. The importance of correction of faulty postural habits and the avoidance of prolonged immobilization of the upper extremity as preventive measures in the development of the painful shoulder girdle is emphasized.

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# REHABILITATION:
# INTEGRATING SCIENCE AND SERVICE*

J. T. BOONE, Vice Admiral (M.C.) U. S. Navy, Rtd.**

As Chief Medical Director of the reputed largest medical and hospital organization, the Department of Medicine and Surgery of the Veterans Administration, I have stated on other occasions that the complex nature of its medical and sociological aspects has known no equal in the history of mankind.

The subject I have chosen today reflects a further expansion of good medicine. It involves a modern concept of medical restoration, commonly referred to as the third phase of medicine which, following the preventive and curative phase, is unfolding before our eyes a new horizon with new opportunities for service, new challenges for science and a better way of life for the tens of thousands of sick people in our civilian and veteran population. Coming out of this is emerging a renewed sense of public interest and responsibility in the problems of medicine in rehabilitation.

I want to talk to you about medical rehabilitation and the team of members, old and new, who have and are contributing to its development. John Galsworthy put these concepts in sharp outline in 1918, when Great Britain was in the throes of a life and death struggle with victory uncertain and the toll of the disabled appalling.

"Body and spirit are inextricably conjoined. If a man's mind, courage and interest be enlisted in the cause of his salvation, healing goes apace, the sufferer is remade . . . a niche of usefulness and self-respect exists for every man however handicapped, but the niche must be found for him. To carry the process to a point short of this is to leave the cathedral without the spire . . . Let us treat him as if he were ourselves; let us treat him as one who demands a full place in the ranks of working life and try to find it for him . . . to restore him and with him the future of our country, that is the sacred work."

This idea of rehabilitation is so basic to a democratic society and so appealing to our minds as well as our hearts that it has naturally expanded. World-wide as well as national organizations have been formed. Resources for rehabilitating and employing handicapped workers, have shown a noteworthy increase.

While there is a formidable list including over a thousand agencies concerned in rehabilitation, the number and total capacity of personnel and physical facilities in this country and abroad today are totally inadequate in relation to the number of persons needing such services. Existing facilities are being utilized to their maximum and long waiting lists of patients are attempting to gain admission to most rehabilitation centers. The need for complete rehabilitation for the millions of homeless and emotionally and physically injured Koreans staggers the imagination. I am bringing these points up for the reason that rehabilitation is far more than a formal medical or even social discipline; it is a spiritual concept which is necessary for the realization of a refined civilization, being restricted neither to race, creed, color, nor nationality.

*The practice of medical rehabilitation begins with the belief that the doctor's responsibility to his patient is not ended when the acute medical and surgical phase is over. The complete job is not finished until the patient has been discharged from the hospital with ability to work with what he has left,* as this group gathered here well knows. The rehabilitation programs of the Military Services and the Veterans Administration have demonstrated that planned integrated programs for convalescent care stressing activity as an adjunct to definitive treatment can reduce the period of hospitalization, offset the deconditioning phenomena of bed rest and prevent the harmful psychological after-effects which so often result from extended hospitalization. It was the recognition of these proven facts that laid the basis for the organization and expansion of the present comprehensive program of physical medicine and rehabilitation in the Veterans Adminisration.

Less than 10 years ago, the total program of rehabilitation of the Veterans Administration included only Occupational Therapy and Physical Therapy. The concepts of Physical Medicine, under which these therapies operated, were confined in general to definitive treatment. Recognizing the need for a more elastic and comprehensive concept to guide the therapy disciplines, the Council of Physical Medicine of the American Medical Association in 1949 added to its title the word "Rehabilitation" and this group began to operate under the new dynamic designation of "Physical Medicine and Rehabilitation." The Vet-

*Read at Seventh Annual Clinical and Scientific Conference of the Association for Physical and Mental Rehabilitation, Washington, D. C. July 22, 1953.

**Chief Medical Director, Department of Medicine and Surgery, Veterans Administration.

erans Administration had already initiated new therapy specialties to carry out the complete treatment of the patient. Today, Corrective Therapy, Manual Arts Therapy and Educational Therapy, as co-equal therapies with Physical Therapy and Occupational Therapy, function under the Chief of Physical Medicine and Rehabilitation. Blind Rehabilitation and Audiology and Speech Correction are also provided in some of the Veterans Administration hospitals.

I can not emphasize too strongly that rehabilitation, to reach maximum usefulness, must represent a combined effort of physicians, nurses, psychologists, social service workers, physical medicine and rehabilitation personnel, vocational counsellors, recreation workers, voluntary workers, attendants and maintenance staff. All these people have an important part in the complete treatment of the patient.

I am particularly happy to discuss the inception and development of corrective therapy and to meet the members of this progressive group here today, for several reasons. I have kept in close touch with your work. As a new group in ancillary medicine, you have experienced the acceleration of growth and progressed in spite of a natural resistance to new ideas.

While the attitude, performance and morale characteristic of your approach to your work are important factors in your success you will need more than spirit. You must acquire a deftness in the discovery and utilization of effective activity techniques. As the physician sharpens his focus in the scientific application of medical modalities, he will need the assistance of most highly specialized skill of the rehabilitation therapist to meet the requirements of more specific medical presciption.

With gratitude and reassurance, I have been informed that your education at both the didactic and clinical levels is constantly being improved and I know the civil service requirements for these positions have been raised. The new probational requirements for corrective therapy issued by the Veterans Administration call for clinical experience in addition to graduation from accredited schools of physical education, as a prerequisite to employment as a corrective therapist. In this connection, I have noted in a recent study that over 90 percent of corrective therapists have degrees including graduate degrees and doctorates in rehabilitation. Affiliations of Columbia University and Springfield College with our Veterans Administration for clinical training already have been instituted on a pilot study basis and I understand that plans are underway for affiliations with the University of Illinois, Ohio State University and the University of California, Los Angeles. The constant revisions of their curricula to add specific and related medical subjects is providing an important reservoir for corrective therapy recruitment. Even more significant, however, is the lift to the professional interest and moral of your workers and the orientation of the universities.

As you know, the initial orientation to this field of activity therapy was provided to many of you in the armed services by such men as Doctors Henry Kessler, Howard Rusk and Donald Covalt. These physicians have also contributed to its development in the Veterans Administration along with Doctor A. Ray Dawson and Doctor A. B. C. Knudson, your present chief, who is directing a most effectively integrated medical service. It should not be forgotten, in this connection, that the physicians in our hospitals have greatly assisted in the development of the many areas of rehabilitation. As a result of your daily experience in working with patients you have been able to develop a practical concept of activity in treatment. You believe in education *through* the physical rather than in education *of* the physical as a tool both for helping and understanding the sick and injured. You are therapists and have developed an effective way of meeting a patient as a fellow man. Doctor Alan Gregg in speaking specifically of you Corrective Therapists declared: "I would have for you therapists special satus in the hospital life because you can set patients examples of health . . . this is especially likely when you do things with patients not to them or for them."

The corrective therapist attempts to help the patient help himself; he tries to motivate the patient. He realizes that the difference between stimulating the patient to move his muscles and doing it himself for the patient may spell the difference between an individual crippled by self-dependency and one who has been able to gain a feeling of hope and confidence. The difference between a patient lying in bed and waiting to get well and the individual motivated and trained to get out of bed under his own power, is the difference between mental and physical decay and invigorating life. In association with other specialty therapies in the Physical Medicine and Rehabilitation Service you are discovering rare and unique qualities growing out of the new medical aims which give power to your discipline and establish for you a field of medical usefulness, the horizon of which remains ever in the distance to spur you on to greater efforts.

Your daily clinical experiences have brought out many illustrations of the challenge and effectiveness of your discipline. Many of you have seen the demonstration by Paul Roland at the Mt. Alto, Veterans Administration Hospital. Seven years ago, Paul Roland became interested in the mute and stuporous catatonic patient. Trying various physical approaches, he soon found that he must devise new ways for penetrating beyond the barriers of this characteristic negativism. He began to realize the importance of getting

far beyond the ordinary concepts of physical exercise. While there is insufficient time to go into this rationale today, suffice to say that he has succeeded under medical direction in organizing what is considered by many to be the most scientific eclectic approach to this most difficult patient type. I am much interested in the research and training clinic being developed under the direction of Doctor Lee Sewall and his staff at the Veterans Administration Hospital, Downey, Illinois for the purpose of further study and evaluation of this method. This will provide a most thorough scientific study and will add impetus to the advancement of psychiatric rehabilitation both within and without the Veterans Administration.

The development of Corrective Therapy as a systematic discipline in the Veterans Administration mental hospital was due to the physician's recognition of a definite need. In discussing patient treatment with physicians the therapist was met invariably with a comment similar to this: "You are helping these patients who are able to go out from the ward for an activity—but for every such patient who leaves the ward, three patients must remain. What can you do for them?" It was for these patients unable to adjust to a group relationship, who had to remain on the ward, that special activity approaches were organized in which Corrective Therapy played an important role. It was realized that the therapist must be able to know more about each patient; his specific illness, his interests and capacity for readjustment. The physicians must provide precise prescriptions, giving these patients activity outlets to replace their resentful behaviours on the ward. The therapist must be able to motivate them and modify activities to meet their distinctve levels of capacity. It was realized that Corrective Therapy in the utilization of exercise and activity had a most potent therapeutic tool, since most of the chronic patients could operate more effectively on an activity rather than on a verbal level. Further study of this situation opened up still other areas. Corrective Therapy became an important assistive medium, not only for treatment, but for diagnosis and prognosis, as the therapist was able to report to the physician the spontaneous reaction of the patient to the various planned exercise and activity situations. Corrective therapists began to discover an important new language of the patient, the language of activity.

The scientific development of our various Physical Medicine and Rehabilitation therapies has led to special exercise and activity resocialization programs for the pre and post lobotomy patient, electric and insulin shock patients and the regressed geriatric patients. Intensive pool therapy programs have been effective in reducing tubs and packs as much as 90 percent in some of our hospitals. It is significant in this connection to note that many of our predominately psychiatric hospitals are taking the restraint tables and tubs out of their acute treatment units and turning this space over to Corrective Therapy and related therapies to be utilized for activity. It is heartwarming to see a distracted, fearful, anxious patient able to work out his hyperactivity in the pleasurable, therapeutic atmosphere of a swimming pool rather than have this activity suppressed by tying and immobilizing him in a wet sheet.

In the general medical and surgical field the corrective therapist is concerned from the most practical aspects of medicine. I am reminded of the story of one of our hospital patients. In talking to the doctor the patient said, "I get awful pains when I bend over, put my hands below my knees, straighten up and bring them above my waist." "Well, why do you make such silly movements then," "Silly, my eye, how else do you think I can get my pants on." It is for the accomplishment of such simple daily activities as putting on one's pants that comprises necessary exercise to the sick individual. It has been said that too frequently in rehabilitation, many of the basic skills necessary for effective living are overlooked. The patient is given numerous medical, psychological and vocational services in preparation for employment, but the re-training in the basic skills, ambulation and self-care activities is neglected with the result that the patient is unable to walk, travel or care for his personal needs. If this is true, he is also unable effectively to use the other medical psychological, social and vocational services which he has received.

Only the person who has been confined to bed for a week or month or longer can appreciate the thrill of walking. The sudden shock of not being able to wash one's face or comb one's hair, or dressing or feeding one's self, calls attention to their importance in medical treatment. Corrective Therapy has made an art and a science in teaching these self-care activities. Teaching a patient to walk may involve as much skill as learning to play a violin. In the early stages of our rehabilitation program the booklet, "What's My Score?" with illustrations of the various ways in which the paralyzed patient can be trained to get out of bed, ambulate, dress and feed himself, was prepared. By a series of illustrations, with the aid of consultation of authorities in the field and study and revision of current activity methods, these daily activity methods were reduced to a scientific application. The resulting booklet has had a tremendous appeal, over 20,000 copies going to individuals requesting them all over the world. As valuable as this booklet was, it has already been replaced by a self care evaluation form as a further advancement in the scientific application of the activity therapy concepts of practice.

The rehabilitation of the neurological patient pro-

vides a good illustration. Here we have found the need for more definite program objectives, including a careful evaluation of the patient; medical, psychiatric, social and vocational. A treatment goal is set in accordance with the evaluation of the patient and an intensive individualized and personalized treatment program instituted. The idea behind this scientific approach is to treat the patient for his immediate needs, as a step toward his ultimate objective. Doctor Harvey Tompkins, my very able Chief of Psychiatry and Neurology, has pointed to the necessity for the provision of temporary objectives in the treatment of the neurological and psychiatric patient. We must realize that with our limited understanding of these patients and their capacity for the various levels of improvement and cure, realistic goals must be set which would enable these individuals to attain an adjustment in the community which will take them out of the hospital and place them in a progressive relationship where medical science and community efforts can combine to ensure the highest adjustment of the patient to his disability.

The Corrective Therapist emerges upon the medical scene when the commodity in which he deals has gained real significance and value. The late Doctor Samuel Hamilton, one of the great leaders in psychiatry, was, as you probably know, a great believer in activity as treatment medium. He used to enjoy telling this story: Visiting one of our Veterans Administration hospitals, he observed a patient who was demonstrating unusual skill in bowling. "You play a fine game," Doctor Hamilton observed. The reaction of the patient was unexpected. With a sudden surge of feeling he went on to say "this is nothing unusual, you don't know what we can do. You know the mentality may become bent, but the activity bent remains unbent." This patient stated a profound truth which has become one of the keystones of your concept in the treatment of the mental patient. It is true that the sick individual does express himself through activities in many ways and that these physical expressions have formed the basis for a new science in adjunctive medical treatment.

In evaluating the hesitancies with which a few physicians in the past have accepted this new discipline, one has but to go back to Doctor Benjamin Rush who has been called by many, the Father of American Medicine. Doctor Rush thought that all patients should be purged and bled. Only 30 years after his death, an equally famous physician declared that the techniques of Rush were "utter nonsense and unqualified stupidity." The great Doctor Weir Mitchell in the last century wrote and preached a doctrine of total test for almost every disease and illness. Keys asserted that there is no doubt but thousands succumbed to degenerated disease and decay as a result of this philosophy. The progress of the concepts of activity as essential parts of medical practice have sustained many attacks along the highways of medicine and I am sure it is a source of great satisfaction to Corrective Therapists to realize that today physical exercise has attained the respectability and eminence of other related medical procedures and practices.

Corrective Therapy is one of the major contributions which the Veterans Administration has made to medicine. The concepts and practices as developed in the Veterans Administration have become the basis for the extension of this treatment to Federal, State and private organizations. I am sure that the members of this organization are justly proud of the extension of their specialization, particularly since this has been in the face of surmounting difficulties and handicaps. In closing, I wish to express my sincere appreciation for your contributions to the medical care program of the Veterans Administration. I am confident that your sincere earnest interest and intelligent service will provide the scientific basis for further usefulness to the veteran and to society at large.

You apply the truism I recently read from a wall where it was painted for all to see in a Veterans Administration Manual Arts Therapy Clinic: "There are no obstacles in life, only challenges."

## NOTICE TO ALL MEMBERS AND SUBSCRIBERS

**At the meeting of the Board of Governors in Washington, D. C. July 19-20, 1953 the Constitution was amended concerning the duties of the officers as follows:**

**Effective September 1, 1953 the membership committee chairman will be vested with the responsibility of receiving and processing all new applications for membership, renewals, reinstatements, and subscriptions. All changes of address will continue to go to the secretary who will maintain the mailing list and the official rosters of the association. The treasurer will receive all checks, money orders, and cash from the membership chairman.**

**Send all applications and renewals with remittances to Leslie Root, Membership Chairman, 4025 N. 124th Street, Milwaukee 10, Wis. Send all changes of address to Stanley H. Wertz, Secretary, 1433 Railton Road, Memphis, Tennessee.**

# AN EXPERIMENT IN EVALUATION OF TREATMENT IN REHABILITATION OF MENTAL PATIENTS*

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and
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THE SITUATION. Treatment evaluation as discussed in this paper represents results of work with a rehabilitation treatment program for a special group of mental patients. In June 1950, a program of brain surgery for treatment of certain severe cases of mental illness was instituted at this hospital. At the end of the period included in this report, forty-two cases (42) have received leukotomy and have constituted this special group for rehabilitation. All new cases are placed in the special program for 3 months, after which, their activities are graduated upward, according to therapy reports and clinical evaluations. Patients who do not respond to the general program are transferred to their original ward and dropped from the post-leukotomy program.

A summary of work with this group shows the following results: Total cases operated, 42. The ages range from 26 to 56 years, with a mean age of 33 years. All cases are Schizophrenic Reaction types of which 23 are of the paranoid type, 15 of the catatonic type, and 4 are unclassified.

Twenty (20) cases, or 47.6%, had electro-shock prior to operations. The number of electro-shock treatments ranged from 5 to 129.

Sixteen (16) cases had pre-operative electroencephalograms of which 6 were abnormal and 2 borderline.

Twelve (12) cases had post-operative electroencephalograms of which 4 were adnormal and 1 borderline.

The length of hospitalization prior to operations ranged from 16 years 8 months to 4 months. The average length of hospitalization was 5 years. The longest hospitalized case (16 years 8 months) was a tuberculosis case operated on in attempt to make a better institutional patient. He was the oldest case (56 years).

Thirteen (13) cases, or 30.9%, showed various degrees of cortical atrophy at operations: 7 cases of paranoid type; 5 catatonic type; 1 unclassified.

Twelve (12) cases, or 28.5%, developed epileptic seizures following operation: 10 cases, grand mal type; 1 autonomic (only 1 seizure); 1 undetermined type (one episode, also shows undetermined type anemia with RBC 3,360,000, HB 7.1 gm). Three (3) cases were paranoid; 8 cases were catatonic; 1 case was unclassified.

Table showing cases with cortical atrophy seizures, diagnosis and pre-operative EEG'S.

| CA | SEIZURE | DIAGNOSIS | PRE-OP EEG |
|---|---|---|---|
| / | O | Paranoid | Abnormal |
| / | GM | Catatonic | |
| / | O | Paranoid | Normal |
| / | GM | Catatonic | |
| / | O | Paranoid | |
| / | O | Catatonic | |
| / | O | Paranoid | |
| / | O | Paranoid | |
| / | O | Catatonic | |
| / | O | Catatonic | |
| / | O | Paranoid | |
| / | O | Paranoid | Abnormal |
| / | GM | Unclassified | |

GM—Grand Mal

Only 3 cases of cortical atrophy had seizures.

Fifteen (15) cases, or 37.5%, are on trial visit. Of these, 7 cases, or 46.7%, are paranoid; 6 cases, or 40%, are catatonic; 2 cases, or 13.3%, are unclassified.

There are 3 cases (one each of paranoid, catatonic and unclassified) feasible for trial visit. This makes a total of 18 cases sufficiently improved to leave the hospital, or a total of 42.9%.

Thirteen (13) cases, or 30.9%, have been made better hospital cases in that they are more easily handled and respond to an institutional regime. Of these, 3 cases, or 23.1%, are catatonic; 9 cases, or 69.2%, are paranoid; 1 case, or 7.7%, unclassified.

The foregoing groups combined give a total of 31 (15/3/13) cases, or 73.8%, with improvement ranging from better institutional cases to those warranting dehospitalization.

Four (4) cases (3 paranoids and one unclassified) have been returned from trial visit because of poor adjustment.

Eleven (11) cases, or 26.2%, show little or no improvement. Of these, 7 cases, or 63.6%, are paranoid; 4 cases, or 36.4%, are catatonic.

One (1) case died on 12-20-50 by aspirating chewing gum during sleep 5 months and 13 days following operation.

At the beginning of this leukotomy treatment procedure, the first problem for the Rehabilitation Team concerned was to established an appropriate program of rehabilitation activities for this group of patients. The Physical Medicine Rehabilitation Service, including Corrective Therapy, Educational Therapy, and Occupational Therapy Sections with the assistance of Acute Intestive Treatment Service, Neurology Service, Continued Treatment Service and Special Services, developed a round-the-clock treatment program. This program was planned with a dual purpose: 1, To develop basic skills in self-care from activities involved in daily living, and 2, To develop or redevelop psycho-social skills; outlooks, understandings and attitudes, which arise in the requirements of living in contact with people. The treatment objective was to achieve an optimum state of normal conduct in these patients by directing personality dynamics in cultural influence (activities) that shape or reshape concepts and habits of action toward a self-directing level of skills in the areas of emotional stability, social, educational and vocational adjustments.

This team-developed treatment program, with appropriate activities in each area, was instituted in October, 1950. To evaluate the progress of the patients the ward physician held monthly meetings with nurses, therapists and aides. During these meetings the

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progress of patents was discussed and specific activities were planned. Written progress reports from therapists were submitted. The progress notes were the usual narrative form and yielded a profuse confusion of indicated progress of the different patients, varying from a well planned outline of the patient's responses to treatment activities to wholly meaningless and misleading statements on how a patient was "getting along." However well planned and written, narrative progress notes yield widely varying opinions by each therapist relative to the same patient and are not indicative of a definite goal for the patient to achieve. Frazier well points up the problem in his discussion of "The Progress Note Problem,"[1] in saying, "The progress record of a given patient becomes valuable when it can be compared with the records of other patients afflicted with simlar disabilities."

Early in the course of this treatment program it was apparent that a more systematic scheme of evaluating a patient's progress was needed, especially with such a wide range of treatment actvities conducted under the physician's direction by so many different persons—therapists, nurses, technicians and aides. An evaluation yard-stick understood by all was an obvious requirement, if reported patient progress was to have any degree of reliability for the physician. It was out of this situation, to meet the need of comparable progress notes, that the treatment team set to work to develop a more accurate method of evaluating patient treatment progress than the narrative progress notes provided in the beginning of this special program. Here was need for a standard of operation that would indicate and direct the treatment activities and serve as a standard indication of treatment progress toward stated patterns of rehabilitation.

DEVELOPING THE EVALUATION DEVICES. Progress reports represent observed behavior changes in the patient. The treatment goal should be to assist the patient to develop toward behavior patterns commonly accepted as desirable in independent self-care and in relations with other persons. Hence, developing reliable treatment evaluation instrument requires the determination, selection and listing of the abilities to be developed in the patients by the various groups included in the rehabilitation team. Following this principle, therapy evaluation sheets were worked out by each group of therapists working in this program. The first sheet was for "Self-care and Personal Hygiene Activities," which contained four divisions of specifically listed skills leading to independence in self-care. Brief samples of skills included in these divisions follow:[2]

1. Bedroom Activities: Dress, undress, properly adjust clothes, comb hair, get in bed, cover self, etc.
2. Bathroom Activities: Wash hands and face, brush teeth, shave, bathe self, flush toilet, etc.
3. Dining Room Activities: Seat self at table, serve plate, eat with fork, spoon, knife; leave place in order, etc.
4. Miscellaneous: Open and close doors, adjust shades, use telephone, keep clothes in order durthe day, etc.

The skills desired and necessary for independent self-care were listed in detail in two columns on this sheet with three columns to the right numbered 1, 2, 3. The numbers were explained in a footnote as "1. Shows no skill, 2. Developing some skill, 3. Satisfactory skill." Improvement in self-care skills is easily observable and objective. It can be observed and a fairly accurate evaluation made by non-technical personnel by a check mark opposite a listed skill in the appropriate column, 1, 2, or 3. The patient either cannot, or can perform to some extent, from unsatisfactory to satisfactory ability.

Corrective Therapy, Occupational Therapy, Education Therapy and Special Services group within the treatment team prepared sheets to evaluate acquisition of the less observable skills of "thinking" in relation to action necessary in normal life as a member of a group, a member of a home and a community. For purposes of our evaluation sheets we arbitrarily tagged these skills collectively as "Personality Traits To Be Developed." The personality factors listed on the evaluation sheets were selected from a large number of statements of such abilities by team members concerned. Therefore, the selections represent carefully determined rehabilitation outcomes in terms of what is desired in conduct reduced to a simple three-point scale of developmental interpretation. Selection was based on group study and determination of "what is acceptable behavior?," analyzed into specific statements of skills, knowledge and attitudes, then listed as abilities to be developed.

Sheet number two, "Resocialization and Attitude Therapy," (Corrective Therapy evaluation sheet) contained eight divisions with approprate subdivisions, such as:

1. Attitude Toward Self: Self-depreciative, doubtful, confident, etc.
2. Attitude Toward Therapist: Hostile, passive, cooperative, etc.
3. Attitude Toward Activity: Resistive, bored, enthusiastic, etc.
4. Attitude Toward Group. Shy, antagonistic. exhibitionistic, leadership, etc.
5. Attention Span: None, short, sustained.
6. Ability To Follow Instructons: Ignores, tries, etc.
7. Reactions In Activity: Timid, aggressive, exerts effort, etc.

8. Speech Response: Mute, talkative, abusive, profane, etc.

Sheet three, Occupational Therapy Evaluation, included a developmental pattern of mainpulative skills and knowledge involved in performance of the activities, and also development of habit patterns desirable in group relations. This sheet follows in entirety.

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OCCUPATIONAL THERAPY EVALUATION SHEET

POST-LOBOTOMY REHABILITATION

REDEVELOPMENT THROUGH CONSTRUCTIVE CRAFT WORK

Rated Weekly for period_____

NAME REG. NO.

| ABILITIES TO BE DEVELOPED | WEEKLY RATINGS | | | | | |
|---|---|---|---|---|---|---|
| 1. INTEREST IN ACTIVITY | | | | | | |
| 2. ATTENTION TO PERTINENT DETAILS | | | | | | |
| 3. UNDERSTAND AND FOLLOW INSTRUCTIONS | | | | | | |
| 4. REMEMBER STEPS IN PROCEDURES | | | | | | |
| 5. MANIPULATIVE SKILLS; | | | | | | |
| a. ARM-HAND COORDINATION | | | | | | |
| b. USE OF FINGERS | | | | | | |
| c. COORDINATION OF LEGS | | | | | | |
| d. PERFECTING PRODUCT | | | | | | |
| 6. CONFIDENCE THROUGH CREATIVE CONSTRUCTION | | | | | | |
| 7. SOCIAL RELATIONS: | | | | | | |
| a. COOPERATE WITH LEADER | | | | | | |
| b. WORK WITH GROUP | | | | | | |
| c. DISCUSS WORK PROBLEMS | | | | | | |
| d. RESPECT RIGHTS OF OTHERS | | | | | | |
| e. OFFER, ACCEPT SUGGESTIONS | | | | | | |

Check progress in appropriate ability - 1, 2, or 3.
Use other side for narrative remarks.

1. Shows no skill, very unsatisfactory.
2. Developing some skill.
3. Developed satisfactory skill.

Similar evaluation check lists were developed for participating Special Services groups—Library, Recreation, Drama and Music, Canteen, and Chaplains. With each the major emphasis was in "Abilities to be Developed," in accord with and toward the team goal for the patient group.

In the early stages of the experiment, the thinking of personnel concerned exhibited more concern with "activities" than with skills to be acquired by the patient. In the process of developing the evaluation devices it was necessary continuously to emphasize this question: What are we trying to do for, to or with the patient?, and further, to press the point that we do not go to the patient, or have him come to our clinics primarily to engage in the various activities available, but rather to provide him therapist's assistance to develop, redevelop, improve and reintegrate specific abilities through participation in the available activities. It is essential, therefore, to determine and state the abilities to be developed. Activities are important to the extent that they motivate acquisition of desired skills and should be listed, usually separate. However, it is possible to combine these in evaluation sheets, if desired. The following evaluation sheet for Educational Therapy includes the general groups of activities in relation to the personality factors to be developed.

Whether or not the activities (modalities) are included in the treatment evaluation sheet, evaluation of the patient's recovery is also evaluation of the modalities that brought about the behavior changes. The evaluation sheet is directive in that it holds before the therapist the course of rehabilitation in direct relation to the activities utilized. This type of progress rating requires therapists to evaluate and measure the modality that brought about the changes. Thus, the evaluation sheet is a continuing directive force that requires review and revision of activities and approaches.

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DEVELOPMENT THROUGH EDUCATIONAL THERAPY ACTIVITIES

NAME REG. NO.

| ABILITIES / PERSONALITY TRAITS TO BE DEVELOPED | DEVELOPMENTAL ACTIVITIES | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPEECH | READING | WRITING | COMPOSITION | NUMBER | DRAWING | TYPING | SOCIAL STUDIES | CONVERSATION | GROUP DISCUSSION | CONSTRUCTION | VISUAL AIDS |
| 1. SELF-CONFIDENCE | | | | | | | | | | | | |
| 2. ATTENTION SPAN | | | | | | | | | | | | |
| 3. INTEREST IN ACTIVITY | | | | | | | | | | | | |
| 4. COOPERATION | | | | | | | | | | | | |
| 5. INITIATIVE | | | | | | | | | | | | |
| 6. FOLLOW INSTRUCTIONS | | | | | | | | | | | | |
| 7. MEMORY SPAN | | | | | | | | | | | | |
| 8. RECOGNITION: | | | | | | | | | | | | |
| PAST, PRESENT | | | | | | | | | | | | |
| REAL, FANCY | | | | | | | | | | | | |
| TIME, SPACE | | | | | | | | | | | | |
| SYMBOLS | | | | | | | | | | | | |
| 9. ASSOCIATION--ABILITY TO RELATE: | | | | | | | | | | | | |
| KNOWN TO UNKNOWN | | | | | | | | | | | | |
| SYMBOLS TO MEANINGS | | | | | | | | | | | | |
| OBJECTS TO MEANINGS | | | | | | | | | | | | |
| IDEAS TO WORDS | | | | | | | | | | | | |
| 10. LOGICAL CONCLUSIONS (Discussion) | | | | | | | | | | | | |
| 11. COORDINATION: | | | | | | | | | | | | |
| EYES | | | | | | | | | | | | |
| NEURO-MOTOR MANIPULATION | | | | | | | | | | | | |
| 12. ORAL EXPRESSION: | | | | | | | | | | | | |
| PRONUNCIATION | | | | | | | | | | | | |
| ENUNCIATION | | | | | | | | | | | | |
| COHERENCE | | | | | | | | | | | | |
| VOICE CONTROL | | | | | | | | | | | | |
| 13. GROUP RELATIONS: | | | | | | | | | | | | |
| COURTEOUS | | | | | | | | | | | | |
| AT EASE WITH GROUP | | | | | | | | | | | | |
| RECOGNIZE RULES | | | | | | | | | | | | |
| RECOGNIZE LEADER | | | | | | | | | | | | |
| WORK WITH TWO OR MORE PERSONS | | | | | | | | | | | | |
| SERVE AS CHAIRMAN | | | | | | | | | | | | |
| WORK ON COMMITTEE | | | | | | | | | | | | |
| CONTRIBUTE IDEAS | | | | | | | | | | | | |
| LISTEN TO OTHERS | | | | | | | | | | | | |
| AWAIT TURN TO SPEAK | | | | | | | | | | | | |
| 14. COMPREHENSION (Reading) | | | | | | | | | | | | |
| 15. ACCURACY OF RESPONSE | | | | | | | | | | | | |
| 16. SPEED OF RESPONSE | | | | | | | | | | | | |

Check progress in abilities under appropriate activity — 1, 2, or 3.
Use other side for narrative remarks.

1. Shows no skill, very unsatisfactory.
2. Developing some skill.
3. Has developed satisfactory skill.

ACHIEVING COMMON UNDERSTANDING OF TERMINOLOGY. In the development of any set of standards, the problem of communication of ideas[3] arises in the early stages of the procedure; that is, the necessity, on the part of all concerned, of arriving at some common understanding of the language necessary in the evolution of the process. Rehabilitation of neuropsychiatric patients means the treatment of behavior disorders. We considered our task to be that of treatment of the total personality of the patient rather than any isolated disablity. It was, therefore, essential to determine and list the behavior traits to be developed in the patients under treatment. In dealing with behavior, the verbal language used is of prime importance. The language used must be commonly un-

derstood to mean the same thing to all concerned before it can be translated into a non-verbal operational level of a treatment program.

The extent of uniformity of understanding of meaning of terminology selected for direction of treatment determines the reliability of the evaluation instrument. The rating instrument sets the patient's course of development, and the therapist's modalities and approaches are the non-verbal operations, during application of which, he observes and "knows" the operational effects on the patient. The therapist's periodic ratings translates the non-verbal results back to the commonly understood verbal language from which the therapy goal was fabricated.

It is, then, highly essential that each member of a treatment group understand the basic terms used to indicate the desired behavior to be acquired by the patients. In our experiment each group of the treatment team explored the various areas of behavior terminology, selecting and rejecting terms until a satisfactory pattern of behavior was determined and listed as "abilities to be developed" by the group and its area of modalities. Selection of the terms to indicate desired behavior was based on the degree of common understanding achieved among the personnel of the groups relative to the language to be used in the lists of behavior traits to be rated.

It is possible, through group study of the semantics involved, to devise evaluation scales that will yield highly reliable information of the developmental progress of a patient in any program of treatment modalities. The extent of reliability of information thus derived depends on two factors: 1, The extent of therapists' participations in the development and revision of the rating devices, which determines the degree of common understandng of terminology, and 2, The statistical ranking of group understanding of terms used in the scales.

There are several statistical measures of meaning in language usage.[4] The statistical techniques employed in this project were those concerned with language symbolization. The Extensional Agreement Index (EAI) was used as a measure of common understanding of meaning of terminology used in developing the evaluation sheets. This measure mathematically expresses the extent of agreement among persons in defining a given term extensionally by pointing to, expressing, or exhibiting somehow the actual objects, phenomena, conditions or ideas to which the term refers. Thus, the EAI measures the word-fact relating achieved among a group of persons relative to defining a given term.

The basic formula[5] for computing the EAI is, $EAI = \frac{x}{y}$, in which $x$ represents the number of obtained agreements, and $y$ the maximum number of agreements possible. The EAI then represents the percentage of the maximum possible number of agreements that are obtained in a given case relative to meaning of a term. Computing the EAI of behavior terminology measures fairly accurately the extent of vagueness of factual meaning o fthe terms to the therapists who are to apply them as estimates of a patient's progress toward established rehabilitation goals. This measure is of value in determining fundamental difference between the degree of vague association and the probability of general understanding among the team members of the rehabilitation goal determined for the patient.

We repeat that the value of a plan for reporting progress of a patient's development of behavior traits lies in the common understanding the therapists have of the terms used in building the evaluation instruments. An EAI of less than .50 among the members of the group treating a patient indicates too much misunderstanding of the language involved to make the reported progress worth the physician's reliance. This means that more group work must be carried on toward achieving common ground of understanding meanings of terminology. An ideal goal is to achieve an EAI of .80 or above.

ADMINISTERING THE EVALUATION SHEETS. In the early stages of a patient's rehabilitation, progress should be checked weekly. Less frequent checks may be made as the patient exhibits acquisition of desired abilities. The weekly evaluations should be summarized monthly for report to the physician. In some unusual cases the doctor may require more frequent reports of progress, but in general, a monthly summary of progress is sufficient for medical direction of a patient's rehabilitation program. Progress ratings on evaluation sheets represent the judgment of the therapist based on his understanding of the patient at the time progress evaluation is made. Daily changes in behavior are generally too imperceptible to record with a practical degree of accuracy. Human abilities evolve slowly in typical persons, and much slower in the atypical. Hence, the simple three-point rating scale is used in the evaluation sheet to indicate the patient's progress toward the rehabilitation goal established as "abilities to be developed." Therefore, observed progress, or lack of progress, should be checked on the scale as the therapist is certain he has observed the change over a period of time.

## SUMMARY

We have presented a brief overview of a rehabilitation team at work with a special group of mental patients, experimenting with the development and use of standard treatment progress evaluation devices. The nature of the total situation, the process of

development of the devices, and their use have been briefly described. The evaluation sheets have provided basic instruments of measurement of patient improvement, and guides for the planning and revision of modality programs to motivate improvement in specified abilities.

Evaluation of patient's progress is made by therapist's reports on their evaluation sheets and is correlated at meetings held at the ward level. Follow-up studies by trial visit adjustment reports from Social Service show that no patient dehospitalized from this group is gainfully employed. Most assume no responsiblity about the home, and all need constant supervision. This information is of great value to the rehabilitation team with its indication of partial achievement of the team objective, and its obvious pointers toward added effort to develop desired abilities in the patients during the period of rehabilitation treatment.

We have not found a single evaluation form pracical for the entire team as it represents several different modality groups and different approaches to the patient. The experiment indicates that each modality group, Corrective Therapy, Educational Therapy, Special Services, or other therapy groups included in the team program, should evolve a pattern of behavior to be developed in the patient in accord with the team rehabilitation goal. There will be overlapping of listed abilities in the different evaluation devices. That is as it must be, if the patient's fullest coordinated development is to be achieved by the treatment team. Each group with its special modalities must see the patient as a person to be integrated in conduct by the assistance of each modality applied. Therefore, there should be as many forms as there are specialized treatment groups, and few, if any, permanent forms to become "handouts" to therapists who have not participated in producing them. This means the occasional, if not frequent, restudy and revision are necessary to maintain and improve basic rehabilitation values of the evaluation devices.

We recommend the experimental procedure described, but not necessarily that any team use the sheets reproduced as samples. Each rehabilitation team should produce its own evaluation devices with the guidance of the physiatrists, the rehabilitation specialists, the psychiatrists and the psychologists. The greatest value of an evaluation device lies in the work required of the team in producing it, thus making it a function of the treatment, interacting with each element at every stage or level of the patient's rehabilitation objective.

Unless scientifically evaluated, the treatment effects of a rehabilitation program will remain vague, if not unknown. There is need for much more experimentation to develop instruments that will make evaluation of rehabilitation treatment more scientific, and more accurately reveal treatment effects on the patient in terms of desirable behavior changes. Here is an open and fruitful field for investigation.

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# AUTOMOBILE DRIVING FOR THE SEVERELY DISABLED

THOMAS J. ROWLEY*

There has been a great deal of interest shown in recent years in research, development and psycho-physical training for both the teachers of driving courses and their pupils. The techniques and hazards of driving have been effectively described in numerous articles, books, commercial pamphlets and visual aids.[1,2,3] Many of the nation's leading colleges and universities have adopted driver instructor training courses to provide qualified personnel to teach driving to high school students.

The many disabled veterans of the second world war have stimulated interest in teaching the severely disabled to drive specially equipped cars. However, there seems to be a lack of written material available to provide an explanation of the equipment needed, the types of disabled persons who may benefit from such training and the technics of instruction. It is therefore, the purpose of this paper to explain these items in relation to automobile driving for the severely disabled.

HISTORY:—In 1945, by an act of Congress[4], $1600 toward the purchase of an automobile was awarded to veterans having service-incurred disabilities with resultant loss of limbs or loss of use of one or more limbs. One of the requirements for receiving the award, at that time, stated that a veteran must have passed a state examination and received his driver's license after becoming disabled. In the Commonwealth of Massachusetts, this led to many inquiries at the Registry of Motor Vehicles and Veterans Administration Contact offices as to how a license could be obtained. This requirement has since been omitted from the orignal law.

In many cases the physical disability of the applicant made it necessary that he learn to drive and be tested in a car with complete automatic transmission, hand controls and other adapted devices; but, at that early time, training cars with such special equipment were not available in this area.

Being a center for the care of paraplegic patients, Cushing Veterans Administration Hospital had a special need for an organized training program. A conference was held between members of the staff of the Massachusetts Registry of Motor Vehicles and members of the Hospital staff in Framingham that resulted in the inauguration of the driver training program for the severely disabled.

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An automobile was obtained[5], fully equipped, to handle any type of persons with any conceivable disability who might be expected to apply for the course. The instructor was chosen from the Corrective Therapy Section of the Physical Medicine and Rehabilitation Service. This therapist was tested and certified by the Massachusetts Registry of Motor Vehicles which reserves the right to approve any instructor as signed to teach in the disabled driver training program.

A general knowledge of the resultant loss of motor function or sensation, or both, in certain disabilities is a prerequisite for anyone engaged in teaching the disabled to drive. Being familiar with these disabilities will help in the evaluation of the kinesthetic abilities of the applicant so the instructor may direct him in a surer and more convenient way to drive safely.

Obviously, there are some types of disabled persons who are not capable of learning to drive. Hence, it was necessary to establish certain criteria which must be observed before an applicant could commence his driver training. The various types of disabilities were discussed and a line was drawn dividing those who could be taught to drive safely and those whose disabilities were such that their driving would be unsafe, for themselves, the motoring public and pedestrians.

The Registry officials and the staff physicians of this installation agreed on a policy regarding the eligibility of an applicant for the driver trainng course. For example, it was stipulated that an applicant should have written medical clearance; he should be free from the use of narcotic and sedative drugs; he should be able to get into and out of an automobile unaided; and, he should be able to control the car and mantain his balance without the aid of straps, slings or any other such attachments.

GENERAL GROUPS OF DISABLED PERMITTED TO RECEIVE DRIVER TRAINING: – The general groups of disabled veterans receiving training for a driver's license at our hospital are: applicants with spinal cord injures (excepting those with cervical lesions), persons who have residual paralysis resulting from poliomyelitis, amputees and hemiplegics. Obviously, there are certain restrictions placed on these disabled persons. The applicants who require special adaptors to operate the vehicle will have plainly marked on their licenses the special devices needed to compensate for their disabilities. To drive an automobile without any one of the devices stipulated

on the license is a violation of motor vehicle laws.

The applicant who has suffered a brain lesion must have been free of grand mal and petite mal seizures for a period satisfactory to the Registry prior to his examination for a license.

There may be instances where an applicant, affected with a disability that is progressive in nature, requests driving instructions. In such cases the applicant may be allowed to take the driver training course and be examined for a license. The Registry may then direct that a written report of the physical condition of the licensed driver be submitted at periodic intervals as determined by the physician in charge of the case.

EQUIPMENT: – The greatest mechancal aid to benefit the disabled driver has been the development of the fully automatic transmission. This has eliminated the clutch pedal and the necessity for moving the conventional gear shift through the first, second and third ranges. In addition, to the no-shift system, many other conveniences such as power steering, power seats, push button windows, windshield washers, ball bearing steering knobs and automatic dimmer switches have all become popular within the past few years.

While these improvements tend to be luxuries for the motoring public they do, in many cases, become necessities to the disabled drver. Each of these gadgets has a purpose and each should be considered for its possibilities in making driving easier and safer for the handicapped driver.

The handicapped driver has a choice of several makes of controls that may be installed easily and, in most cases, inexpensively. It is not the purpose of this paper to evaluate or compare the various controls. It is, rather, the purpose to explain the type used at this hospital and therefore most familiar to the author.

For the applicant who no longer has the use of his lower extremities, the tri-purpose lever makes it possible for a car to be driven completely by hand. This lever has been designed so that it does not interfere with the conventional operation of the car by a non-disabled person. The lever extends to the left of the steering column and is neither longer nor more awkward to use than the shift lever which extends in the opposite direction from the right side of the steering post. It functions in the following way:

1. A downward movement of the tri-purpose lever from the neutral position results in direct acceleration.
2. An upward movement of the lever gives the car its breaking power. Unlike the floor brake, the hand controlled system uses a vacuum-aided brake. This gives maximum efficiency without the force required on the conventional floor pedal. It is arranged through a system of hose connections from the intake manifold to a vacuum tank through a control valve, then by linkage assembly to the master brake cylinder. Thus, the hydraulic brake system is effected by power taken from the motor and controlled by a lever.
3. From the neutral position, a pull of the lever toward the driver controls the headlight dimmer switch.

Other modifications are necessary with the use of hand controls. It must be kept in mind that the left hand cannot be used for hand signals or aid in turning the wheel since it is in constant use on the control lever. Therefore, electric directional signals and spinner knob on the wheel are essential equipment on a hand-controlled car.

Other driving aids essental in a car to be used in a disabled driver training program should include:

1. Foot accelerator pedal installed to the left of the brake pedal to accomodate unilateral amputees and unilateral paralyses of the right lower extremity.
2. An extension connected to the shift lever which extends to the left side to accomodate amputations or paralyses of the right upper extremities.
3. Parking brakes – one on the right side and one on the left side of the steering post.
4. In addition to the spinner knob (already mentioned) a spinner knob designed to accomodate a prosthetic attachment used by an upper extremity amputee.
5. Adaptors on the dash controls to accommodate an applicant with a prosthetic hook.

Of course, the individual disabled will have his automobile modified only to the minimum extent necessary. Table I outlines the devices suggested for the various disabilities.

One other device that is essential to any car that is to be used for any form of driver training is an instructor's brake. The brake on the car may be either the floor pedal type or a dash handle type attached to the vacuum system of the hand controls. The latter type is used by this instructor and has proved itself efficient and convenient on the occasions when it was needed.

TECHNICS OF DRIVING INSTRUCTION: – The applicant starts his driving lessons as soon as his medical clearance has been received. Each driving lesson is approximately 40 minutes in length. A minimum of 12 lessons has been suggested by the Registry regardless of whether or not the applicant has been licensed previously.

Like any non-disabled person the new driver is anxious to take his place behind the wheel and enjoy the thrill of driving an automobile. Therefore, the course is actually started in the car with the appli-

TABLE 1

| DISABILITY | SUGGESTED DEVICES TO BE USED IN ADDITION TO AUTOMATIC TRANSMISSION |
|---|---|
| UPPER EXTREMITY, Unilateral amputation right, without prosthesis* | Steering knob (left side of wheel)<br>Shift lever adaptor to left<br>Directional signals<br>Left hand parking brake |
| UPPER EXTREMITY, Unilateral amputation, left, without prosthesis* | Steering knob<br>Parking brake right side of steering post<br>Directional signals mounted on the right side |
| LOWER EXTREMITY, Unilateral above the knee amputation, right ** | Fully automatic transmission<br>Left accelerator pedal<br>Wide brake pedal<br>Hand operated dimmer switch |
| LOWER EXTREMITY, Unilateral above the knee amputation, left ** | Fully automatic transmission<br>Hand operated dimmer switch |
| LOWER EXTREMITIES, Bilateral above the knee amputation<br>and<br>SPINAL CORD INJURY with resultant paraplegia | Fully automatic transmission<br>Hand controlled accelerator and brake system<br>Spinner knob for steering<br>Hand operated dimmer switch<br>Directional signals<br>Handle inside and above door, as aid for getting in |
| HEMIPARESIS, right<br>HEMIPLEGIA | Fully automatic transmission<br>Left foot accelerator<br>Hand operated dimmer switch<br>Parking brake on left side of steering post<br>Steering knob<br>Shift lever adaptor<br>Directional signals |
| HEMIPARESIS, left<br>HEMIPLEGIA | Fully automatic transmission<br>Hand operated dimmer switch<br>Directional signals<br>Steering knob<br>Parking brake on right side of steering post |

*Note that the unilateral arm amputee with a well functioning prosthesis can drive any conventional car provided that it be equipped with prosthetic spinner device to receive the hook.

**Unilateral or bilateral below the knee amputees are usually capable of driving any conventional car while wearing their prostheses.

cant at the controls. Classroom work on the manipulation of the controls, rules and regulations of driving and study of driving conditions are postponed until they will become more meaningful in reference to the actual driving.

After the applicant is given a brief orientation on the use of the controls and how to start the motor, the car is put into operation. About 20 minutes, or half a lesson, is devoted to the training in starting and stopping the car so the applicant may "get the feel" of the car and, especially, the brake. The first driving lesson takes place in an area where there is very little traffic. After the driver returns to the starting point, he is oriented on the course, a complete description of the controls, and a synopsis of what will be expected of him in the lessons to follow. It is felt that the beginner is much more receptive to this verbal instruction after he has once driven the automobile.

The next three lessons are generally continued in an area where there is little traffic. At this installation we are fortunate in having hard paved roads on the hospital grounds where most road conditions and hazards are simulated. Generally, at the end of the fourth lesson, the applicant is ready to drive in light traffic situations on public highways.

The next three lessons are generally given under these same conditions with a more thorough training on such procedures as stopping and starting on a grade, turning the car around on a two line roadway and curb parking in a limited space.

The remaining lessons are continued in heavy traffic situations through downtown traffic involving traffic lights, busy intersections and narrow thoroughfares.

Finally, the applicant takes a competency test conducted by the instructor. During this test the instructor avoids giving assistance and, as an observer he evaluates the patient's driving ability. After the instructor has satisfied himself with the patient's skill, an appointment for the official examination is made.

For the student applicant who drove a normally

equipped automobile prior to his disability the variations from the standard procedure seem quite confusing at first. However, manipulation of the special devices soon becomes automatic. In order to avoid disappointment and discouragement, these variations should be explained simply but thoroughly by the instructor before a maneuver is to be executed for the first time. A clear understanding by the applicant of why each procedure has been found to be both convenient and safe leads to a better attitude in regard to the instructions. He will then accept the instructions more readily and is averted from thinking that these procedures are merely regimented suggestions. Thus, the key to a successful disabled driver training program may well be the applicant's ability to understand and apply the instructions with ease and sureness.

The maneuvers a disabled driver is expected to perform are no different from those expected of the non-disabled applicant. The difference is in the way these maneuvers must be accomplished.

For the applicant who is restricted to the use of hand controls the following procedures must be mastered in addition to straight driving:

*Driving in Reverse*:—The applicant with both hands in use while operating the vehicle is restricted as to how far he may turn to look out of the rear window when he intends to back up. Therefore, he should perform this maneuver very cautiously. The routine taught by this instructor is:

1. Apply the hand controlled brake.
2. Shift the gear selector to the reverse position.
3. Check for obstacles at the rear of the car. Also check for oncoming traffic by use of the rear view mirror and by twisting the head to look over the left shoulder—a necessary motion to look past the blind spot at the rear of most cars.
4. Back up slowly. Judge the car's position from the opposite curb and glance occasionlly in the rear view mirror to make sure the way remains clear.

*Putting the Car in Motion on an Up-Grade*:—Assume the car has been stopped heading up a hill with the brakes applied and the gear shift in neutral. The applicant should:

1. Shift the gear selector to drive position.
2. Apply the hand control brake and hold with the left hand.
3. Transfer the grip on the hand control brake by bringing the right hand over the top of the steering wheel to relieve the left hand and maintain control of the brake with the right hand.
4. Release the parking brake with the free left hand, then replace the left hand on the control lever.
5. Glance in the rear view mirror, then look over the left shoulder to make certain the roadway is clear before proceeding.
6. Bring the hand control lever down quickly past the neutral position to fast acceleration. If this operation has been performed correctly the car will not roll backward, but acceleration will be greater than required.
7. Release the accelerator lever to the desired, controlled speed.

*Turning to the Left*:—Turns to the left must be executed only after the speed of the car has been substantially reduced. The centrifugal pull of a car turning to the left tends to throw a driver to the right side of the car. With the left hand on the accelerator lever, a sudden loss of balance to the right may result in a sudden burst of speed and a probable accident.

*General Precautions*:—An applicant is never allowed to smoke when he is at the controls and the car is in operation. All dash controls including windshield wiper, lights, temperature controls, radio, etc., may be applied or adjusted only when the car is brought to a complete stop. The only safe way in which an applicant, using hand controls, may apply or adjust the dash controls is to drive to the right side of the road, stop the car and then make the necessary adjustments.

For hemiplegics, single amputees and all others using the floor controls (accelerator and brake pedal) the following procedures are used for the specified maneuver:

*Putting the Car in Motion on an Up-Grade (automatic transmissions)*:—After stopping the car on an upgrade and applying the parking brake, the applicant is instructed to start off in this manner:

1. Move the gear selector to drive position.
2. Depress the accelerator pedal to the place where the strain is evident on the car's engine.
3. Hold the accelerator pedal with the foot in this position and release the parking brake.
4. Glance in the rear view mirror, then look over the left shoulder to check for oncoming traffic.
5. Depress the accelerator to the desired speed.

THE EXAMINATION:—It may appear that to license a severely disabled person creates additional hazards on the public roads . It is also falsely assumed by some that the Registry officials, out of sympathy for the disabled person, may favor him and issue a license without passing a rigid test. As far as the Commonwealth of Massachusetts is concerned, the contrary is true. The time devoted to a disabled person's license examination is at least twice as long as that given to non-disabled persons at the Registry's examining stations.

The examination begins indoors where the appli-

cant is given a vision test, a color test, a reading test and a knowledge test of the Motor Vehicle Laws. If the applicant successfully passes these, he is permitted to proceed to the car and take his place behind the wheel. The Inspector watches the applicant's approach to the car, be he ambulatory or in a wheelchair, and observes his method of entering the car. Thus, an early estimation of the applicant's weaknesses or malfunctions may be obtained by the experienced Inspector. Careful observation of an involved limb, or limbs, during certain maneuvers of the car is also made.

The road test is so arranged that just about every type of driving hazard is encountered and every possible maneuver of the car is performed. In addition to driving in urban and suburban traffic conditions the applicant is tested on braking, turning corners, parking, use of hand or electric signals, turning the car around between curbs on a two lane street and starting on a grade without permitting the car to roll backward.

At the end of the examination, the successful applicant receives a certificate from the Examiner to show that he has completed a course in driving for disabled applicants. He also receives a temporary permit to allow him to drive for 30 days—by which time he will have received a license, valid for two years. Like all novice drivers in Massachusetts, the disabled's first license will be white identifying him as a new driver. His renewal license, after the first two years, will be green to denote that the holder is an experienced driver.

The disabled driver training program has been in constant operation for the past seven years at Cushing Veterans Administration Hospital. During that time, 221 applicants have completed the course and received their licenses to operate a vehicle with various devices and modifications. Because of the known rigid requirements set up by the Commonwealth of Massachusetts, many of these drivers have, on their request, received a license from their home states without further examination.

The driver training course has proved a valuable adjunct to the Rehabilitation program at this hospital. It has provided incentives which have stimulated a greater interest on the patient's part toward his own rehabilitation; for, despite his handicap, he can still look forward to a future where he will not be restricted to the confines of a hospital or a home.

The present trend of our modern society toward decentralization of communities from industrial and shopping areas to suburban areas, where the home becomes removed from the place of employment or educational facilities places a high premium on the importance of the automobile as a necessity for the average family. To the handicapped it is very often the difference between gainful employment and a life of isolation within his home.

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# THE AMPUTEE GAIT CLINIC – A TEAM APPROACH

WALTER H. MOORE, Capt., M.C.; JOHN J. KEYS, Major, M.S.C.; RAOUL C. PSAKI, Lt. Col., M.C.*

The field of medical endeavor has become progressively broader over the years. As the scope broadened, the activities of individual doctors has been narrowed down to the various specialties. Treatment of the sick and wounded, which once revolved around any good medical practitioner now often involves a whole group of medical specialists. A good illustration of this is the rehabilitation of amputee patients, which requires auxiliary medical personnel in the fields of Physical Medicine and prosthetic manufacturing in addition to other medical specialists. A supposed advantage of specializing is that the patient gets better care. Specialization leads to division of responsibility, which if not coordinated, can leave gaps in the treatment program and thus not entirely meet the needs of the patient.

The problem of rehabilitation of a lower extremity amputee concerns technical and professional personnel in multiple, but related fields. The period of rehabilitation can be divided chronologically into the surgical phase and post-surgical phase for the ordinary uncomplicated case. The success of this latter phase is directly dependent on adequate surgery, and the surgeon retains an interest in this phase to protect his professional investment.

Following surgery, the patient is a candidate for appropriate Physical Medicine treatments to prepare the patient and the amputation stump for the fitting and wearing of a prosthesis. The treatment and procedures involved have been outlined and discussed by Rose[1] and Soffe, Thomas[2] and Haddon, and Daniel.[3] The well integrated Physical Medicine Service will be alert to the management of the post surgical phase. Beginning with bed posture following surgery, they will carry through with preparation of the healed stump for fitting and use of the artificial limb.

After adequate preparation, the patient is fitted with a prosthesis. According to Slocum,[4] the readiness of a stump for a prosthesis is determined by definite criteria:

1. Sound healing.
2. Freedom from pain on manupulation.
3. Normal circulation.
4. Normal range of motion. We would add a fifth, namely, adequate muscle power.

When provided with a prosthesis, the lower extremity amputee begins another stage of his adjustment, which includes learning the art of ambulation with a replacement extremity. The need for a period of training under a skilled instructor has been emphasized by Slocum,[4] Thomas[2] and Haddon and Daniel.[3] As the patient masters the new skill, the results from the efforts of all involved personnel are met in a common goal; that is, the ability of the amputee to walk, run, sit and stand, and to do all these with the confidence and nonchalance that is desirable.

Various authors have stressed the value of a close working relationship of the Orthopedic Surgeon, Prosthetist and Physiatrist. (Dow,[5] Rose,[1] and Soffe, Thomas[2] and Haddon). The efforts of these three: the Orthopedic Surgeon, the Prosthetist and the Physiatrist are all brought to a focus in the ability of the patient to adapt to and use his new prosthesis. Because each of these has a stake in the final result, it is reasonable that they should get together periodically and observe the patient's progress in training with the prosthesis. Such an opportunity is provided by a weekly amputee gait clinic. Here the professional personnel involved can review each patient's progress and efficiently take any steps necessary to facilitate further training of the amputee.

At this hospital, the gait clinic is conducted by the Chief of Physical Medicine, assisted by the Orthopedic Surgeon, the Prosthetist or limb maker, the Physical Reconditioning Director and the Physical Therapist or trainer who gives the actual gait instructions. Conduct of this clinic is not a simple matter of observing the amputee in walking, giving encouragement and ultimate approval with recommendation for discharge. Instead, because each patient is an individual, with a slightly different stump, prosthesis, posture and gait, various problems arise during the training phase. These problems require decisions regarding the stump, the prosthesis or the body mechanisms. Daniel[3] and Slocum[4] have each emphasized the importance of a period of supervised training for the newly fitted amputee. Thomas[2] and Haddon state that: "Too much emphasis has been placed on the mechanical feature of the prosthesis and little or none on the far more important feature of training the amputee to use it."

Mendler[6] et al., have outlined such a program for Above-The-Knee Amputees. We mean to deal further with problems that arise during the period of training and which concern the Surgeon, the Prosthetist or the Physiatrist. Efficient action as these problems are met, can speed up the patient's training period

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and reduce his necessary hospitalization or shorten his period of disability. We believe these problems which often delay training can best be solved by joint action of the key personnel concerned. Again, the need for a team approach has been stressed by Slocum,[4] Daniel[3] and Mendler,[6] et al.

Following are given lists of some of the typical problems which arise for consideraton in an amputee gait clinic. These have been grouped according to the individual most concerned, whether Prosthetist, Surgeon or Physiatrist. It will be noted that problems often do not fit neatly into one or the other category, but may concern two or more specialists.

I *Problems of the Prosthetist*

The Prosthetist is most concerned with fit, alignment and mechanics of the prosthesis. Haddon[3] has stressed the importance of fit and alignment in a recent article. Following are some of the problems most commonly encountered in the field of the Prosthetist.

1. Faulty alignment. This alone may prevent achieving a satisfactory gait.
2. Discomfort, due to uneven pressure points. Often this cannot be detected until the prosthesis has been used in a few days. It can usually be easily corrected by grinding away strategic spots in the socket.
3. Improper length of the prosthesis. This often is correct at first and changes as the stump changes in size.
4. With use, the size of the stump changes by shrinkage or muscle hypertrophy necessitating changes in size of the socket. Small differences can be compensated by varying the number of stump socks worn.
5. The rotation of the prosthesis may be incorrect, allowing too much "toe in" or "toe out."
6. Suction adjustments on suction sockets. The valves are usually adjusted to allow one to three pounds of negative pressure.
7. Adjustments, mechanical:
   a. Check straps
   b. Kick straps
   c. Pelvic belt
   d. Shoulder straps when worn
   e. Front and rear foot bumpers
   f. Knee brake—"friction adjustment"

   Minor adjustments can be made at the time, right in the gait clinic. Major changes require a visit to the Artificial Limb Shop.

II *Problems for the Orthopedic Surgeon*

The Surgeon is most interested in disabilities of the stump and adequacy of the surgery. Complete healing must be assured before fitting is done. Some problems which concern principally the Surgeon are:

1. In appropriate scar placement. Sometimes when amputation is a result of trauma, an attempt to preserve length leads to a compromise on location of the scar. The final result may be a painful scar, or breakdown of the tissues after wearing the prosthesis.
2. Painful neuromata.
3. Painful bony spur or exostosis. X-rays of the stumps help to diagnose these.
4. Vascular difficulties such that stump cannot stand pressure or suction.
5. Abrasions on the skin from friction.
6. Intrinsic disease of proximal joints.
7. Extrinsic disease of proximal joints, i.e., peri-articular fibrosis or peri-arthritis.
8. Fractures in the stump or in the opposite lower extremity. (Weight-bearing may be contra-indicated at first, then later, desirable).
9. The obese patient. This is partially a problem in medical management for the ward surgeon. A recent obese patient proved also a problem for the prosthetist to build a sufficiently strong socket for a 28 inch thigh.

III *Problems for the Physiatrist*

The physiatrist is most concerned with body mechanics, muscle strength, balance and degree of training. Some problems which concern largely the Physiatrist are:

1. Contractures. The aim should be prevent them and gain complete range of motion.
2. Intrinsic or extrinsic disease of proximal joints. (When chronic and not preventing gait training)
3. Multiple amputations.
4. Muscle weakness.
5. Other system disabilities such as poor vision or poor balance. This can be a handicap in training.
6. Idiosyncrasies of gait.
7. Poor coordination.
8. Abrasions on the stump from friction.
9. Minor fit and adjustment difficulties.
10. The inept patient. Occasionally one finds a patient who is just unable to develop a skillful use of the prosthesis for no apparent reason.
11. The obese patient. Thighs may actually rub together while walking.
12. Evaluation of stage of training. A classification of the degree of proficiency and stage of training was outlined by Mendler[6] et al.

The weekly amputee gait evaluation clinic does not solve all the problems of efficient rehabilitation, but it has been found to be a very worthwhile approach. Rose, in Slocum Atlas[7] has emphasized a hazard in the team approach to wit: "No one group must feel that it is the most important. If it does, sooner or later there will be overlapping of treatment efforts, impaired personal and professional feelings and gaps in the treatment program."

With the Physiatrist as coordinator, the amputee gait clinic team has close control over the progress of each patient and individual attention is given. The weekly review of the patient's progress does not preclude minor changes or adjustments in the prosthesis or in the training program during the interval between clinics. Likewise, such problems as abrasions on a stump or insufficient muscle strength are usually met as they arise by the personnel most concerned, i.e., the Physical Medicine Personnel. The team approach at this weekly gait clinic enables major decisions and recommendations at the time, and further outlining of guiding principles for minor decisions which must be reached throughout the remainder of the week.

Another advantage of the gait clinic at this institution has been as a teaching aid. This hospital has a residency program in both Orthopedic Surgery and Physical Medicine and Rehabilitation. This gait clinic then serves as an instructional seminar for residents in these two specialties. Here, one can see the happy culmination of adequate surgery, skillful limb fitting, plus excellent body mechanics and gait instruction. Here too, any deficit in the realm of amputee rehabiltation is likely to get an airing. Naturally, controversial subjects are not discussed in front of patients.

*Summary*: Presented here is a working plan for an Amputee Gait Clinic. The clinic is held weekly. It is conducted by the Physiatrist and attended by the Orthopedic Surgeon, Prosthetist, Physical Reconditioning Director and Physical Therapist. Each amputee is considered separately and his needs and proficiency evaluated. Individual attention is stressed. For a period of more than a year, this clinic has proven a valuable means for facilitating amputee rehabilitation. It serves a useful purpose as a teaching aid for residents in Physical Medicine and Rehabilitation, and Orthopedic Surgery. By bringing the specialists together as a team, we believe it helps to more nearly meet the total needs of the patient.

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## REPRINTS AVAILABLE

The reprints listed below are now available. Prices are based on number of pages. 1 p.—.10; 2-4 pp.—.15; 5-10 pp.—.25. These prices include mailing cost, except for quantity lots.

Corrective Therapy in the Surgical Knee—Thomas S. Robertson, M.D., and John M. Hawk, 6:1 Sept. '52 ..... .15

The Total Approach in Educating our Physically Handicapped Youth—J. L. Rudd, M.D., 6:1, Sept. '52 ..... .15

General Principles of Exercise Therapy—Alfred Ebel, M.D., and Arthur S. Abramson, M.D., 5:4, Mar. '52 ..... .15

Factors Related to Training of Upper Extremity Amputee—Norman Berger, M.S., and Marshall A. Graham, B.S., 5:3, Jan. '52..... .15

Remedial Exercises and Rehabilitation in Back Injuries—Marcus J. Stewart, M.D., 4:8, April, '52.... .25

Prevention of Low Back Pain—Hans Kraus, M.D., 6:1, Sept. '52..... .15

The Hack Self-Reliant Walker: An Improved and Tested Aid in Ambulation—George V. Devins, B.A., and Roy H. Nyquist, M.D., 6:5, Nov. '52.... .15

Subject-Author Index, 5:6, July '52..... .25

A Guide for the Corrective Therapist in the Treatment of Patients with Lower Extremity Amputations—Paul F. Fleer, M.Ed., 5:6, July '52..... .25

A Conditioning Program for Sedentary Men—Lawrence E. Morehouse, Ph.D., 7:2, pp., April, '53.... .25
'53 ..... .25

The Role of Neurosurgery in Rehabiltation of the Paraplegic Patient—C. D. Scheibert, M.D., 7:3, May '53 ..... .15

A Practical Approach to the Treatment of Brachial Birth Palsy—Franziska Schweitzer, 7:3, May '53.... .25

Preliminary Survey and Analysis of the Educational and Professional Background of the Corrective Therapist—Louis F. Mantovano, 7:2, March, '53.. .15

Rehabilitation Potentials in Spinal Cord and Cauda Equina Injuries—Louis B. Newman, M.E., M.D., 7:3, May '53..... .15

Factors Related to the Restoration of Language Function in Aphasic Patients—Jon Eisenson, Ph.D., and Robert C. Morrow, Ph.D., 7:3, May '53..... .15

# "From Other Journals"

D. C. FRASER, "Research on Fatigue," *Discovery*, XIV:40-44, February, 1953

Fatigue may be studied in three main contexts: physiological, functional and subjective. Waste products of muscular activity accumulate where there has been excessive physical activity, but little or nothing in the way of a chemical measure of fatigue has been observed as the result of less strenuous work. It has not proved possible to find a simple physiological indicator of fatigue resulting from prolonged intellectual effort. One fundamental problem in the devising of a suitable test for fatigue is that the reaction to the novelty of doing the test tends to mask the fatigue effects. In a study of aviators the most striking finding was the deterioration in timing. It is the first thing to suffer as the individual becomes fatigued. It is not so much that the operator does the wrong thing as that he does the right thing at the wrong time. What seems to happen is that there has to be a bigger change before the operator considers it worth while to do anything about it. The danger at this particular stage of fatigue is that the operator does not usually know that he is waiting for the change to become really critical; he thinks that he is working just as well as ever. A second symptom was failure to notice signals which required action only occasionally. Actions to be made in response to signals lying outside the main field of attention tended to be omitted. As fatigue increases, the operator tends to become more and more conscious of sensations coming from his own body. Many experiments have been made to study objectively the effects of noise on performance. Broadbent has shown there is a substantial and consistent impairment in the performance of vigilance tests carried out in high-intensity noise; this impairment is shown by some subjects but not by others. We can have almost any subjective judgment of fatigue going with the same objective performance. It is necessary to be cautious in drawing general conclusions from a limited amount of laboratory investigations.

PJR

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NELLO PACE, "Front-line Studies of Combat Stress," Office of Naval Research *Research Reviews*, July, 1953, pp. 1-6.

In central Korea ONR Unit One made the first physiological and psychological study of men in actual combat. Results from the study are not yet complete, but in general combat stress results in marked organic changes indicating that both the pituitary-adrenal system and the autonomic nervous system are considerably affected. A profound drop in white blood cell count was noted, marked decrease in plasma cholesterol level occurred, and a significant change in the sodium potassium ratio of the blood, urine, and saliva was seen. Changes in both the nitrogen balance of the body and in the urinary sugar output were detected. The response to Mecholyl (R) was also altered. Both the visual flicker fusion frequency and auditory flutter fusion frequency were depressed. No discernible changes occurred in the measures of higher mental function. Subjectively there were noted pronounced personality changes of a transitory nature in the individual as a result of the combat stress. These apparently provide a promising field for future research.

PJR

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WARREN R. JOHNSON and DAVID H. BLACK, "Comparison of Effects of Certain Blood Alkalizers and Glucose Upon Competitive Endurance Performance," *Journal of Applied Physiology*, April, 1953, 5:577-578.

Students of athletics have searched for food substances which could improve performance. Glucose, a buffer addition advocated by Denning, and the phosphated sugar of Embden were tested over a full season of cross-country running. The subjects were 11 high school boys between 16 and 19. Each received either a placebo or one of the ergogenic aids four hours before all but one of the eight cross country meets. Statistical analysis of the data revealed that the times of the runners were not affected by these aids.

PJR

H. W. ELLIOTT and V. C. SUTHERLAND, "The Oxygen Uptake of Human Cerebral Cortex Slices and the Effects of Some Inhibitors," *Journal of Cellular and Comparative Physiology*, October, 1952, 40:221-239.

The oxygen consumption of human cerebral slices removed from psychotic patients during prefrontal lobotomy operations was measured in the presence of various substrates. Since certain amino acids give rise to products known to contribute to cellular energy production, an amino acid mixture was used as a substrate. This maintained the $Qo_2$ of human brain slices above the endogenous level, with a 23% falling off in three hours. This decrease was prevented by the addition of glucose. Glutamate produced a $Qo_2$ identical with that found for glucose. The use of glutamate alone could not maintain the $Qo_2$ of rat or guinea pig brain slices. The possibility that amino acids may serve as a foodstuff for the intact brain lends special significance to the findings. It appears that amino acids are utilized moore efficiently by human brain slices than by those of other species.

PJR

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J. H. VAN DEN BERG, "The Human Body and the Significance of Human Movement," *Philosophy and Phenomenological Research*, XIII:159-183, December, 1952.

It is only the behavior that explains the body. With compulsion neurosis we are accustomed to speak of a "compulsion." Such a patient knows nothing of this. That which is constantly clear to him consists of a remarkable hostility of the objects around him. For obsessive compulsive patients the whole world is filled with decay. Every pathological change of the body reveals itself originally as a new order in the external world. The derangements of the cerebrally injured only become comprehensible when we stop regarding the patient as an individual having an injured body. Everyone lives in peace with the shape and nature of certain parts of his body and in a certain discord with other parts. Every human movement is a function determined by a sphere of values which furnishes significance to this movement and makes it mean something. The significance lies in the situation in which the man performs his movements. The only possibility for us to completely understand the behavior of the catatonic is to understand that his world has totally changed. The locality which provides this situation is in the look of the other, which is directed at this moving body. The theory of human movement consists of the things in which man daily realizes and reveals himself; the functional reciprocity of man's inner self and the world, and the modification which human movement undergoes when it takes place under the regard of another.

PJR

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EBBE CURTIS HOFF, "The Brain—A Master Coordinator," Office of Naval Research *Research Reviews*, May, 1953, pp. 7-13.

If we remove the prefrontal areas of a chimpanzee we find subtle defects in behavior result. There is no motor defect but some alteration in the comprehension of a problem. The animal makes more frequent mistakes and is more distractable than before the operation, but does not seem to be worried by the fact a mistake may result in punishment. This is in striking contrast to the severe "neurosis" that may result when an unoperated animal is faced repeatedly with problems too difficult to solve. We have no satisfying understanding of how lobotomy or sub-shock or shock procedures affect mental mechanisms. The mind is unaware of the nerve impulses and chemical reactions that are the brain's characteristic action and seems to transcend them. All signs point to the nervous systems as a coordinator. As the brain is connected via the hypothalamus to the pituitary gland, master of the endocrine glands, we see what potent influence the nerve endocrine complex must exert in the integration of the organism. The integrative work of the cortex seems to comprehend both automatic and somatic functions. It is likely that therapeutic electric shock acts not only through the effect of the current directly upon brain tissues, but through excitation of brain autonomic mechanisms which the circulation and hence the metabolism of widespread organs of the body.

PJR

# *Editorials*

## THE WASHINGTON CONFERENCE

Unique! Different! In contrast to previous conventions, the Washington Conference emphasized the professional value of demonstration, exhibits and panel discussions when blended in the proper relationship. It was a working convention. The participation of delegates at all panel discussions was an indication of the stimulating quality of the papers. This participation was convincing evidence of the enthusiasm of the Corrective Therapist for professional growth.

Demonstrations took place in the room containing the clinical and scientific exhibits, thus enabling the delegates to budget their time so as to attend more of the clinical sessions. The commercial exhibits were adjacent to the general assembly room, which could only be entered through the room containing the exhibits.

Many facts and figures were presented showing the inadequate manner in which welfare agancies, workmen's compensation benefits and pensions meet the tremendous need for rehabilitation country-wide, indicating the need for continuation of the contributions still to be made by the corrective therapist, occupational therapist, physical therapist, manual arts therapist, educational therapist, the social worker, the vocational counselor, the blind orientator (to name but a few members of the rehabilitation team who are now assisting the medical profession) in bringing the patient through a happy convalescence to a productive future with what he has left. It was clearly evident that there is much work to be done by all of the specialties of the team. *Not one of these services is capable either by training or experience to know all of the answers to all of the complex physical, mental, social and economic factors encountered in the rehabilitation phase of restorative medicine.*

There were other statistics given by several speakers to show that the cost of welfare, workingmen's compensation benefits and pensions are taking more from the taxpayer than would the development of community rehabilitation programs.

The awareness of this need for an expansion of the rehabilitation phase of restorative medicine by the contribution these several adjunctive therapies are capable of making, was recognized and accepted. This need was also recognized by the daily news coverage by such papers as the New York Times. Some of the headlines were:

"Doctor Envisioned As A Team Leader." (We were told that he would restore health with the aid of the various therapies and help the disabled to return to a life of happiness and productivity.)

"Help To Disabled Called A Civic Duty." (Key groups in the community were challenged to coordinate their efforts.)

"Wider Aid Is Urged In Cerebral Palsy." (More can be done for this group than has been thought possible.)

Television and Radio Broadcasts were another evidence of the public interest and concern about the solution of the rehabilitation problems with their complex ramifications.

The Washington Conference in all of it's many clinical and scientific sessions, exhibits and demonstrations developed the conference theme: REHABILITATION: INTEGRATING SCIENCE AND SERVICE, into a pattern-setting meeting, that emphasized again and again, the keen desire of the delegates from medicine, psychiatry, social service, vocational counselling and Corrective Therapy, for continued professional growth.

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## RESEARCH: A DISTINCT RESPONSIBILITY OF THE CORRECTIVE THERAPIST

It has been said that the advancement of any new field of medicine depends on a parallel development of treatment, teaching, and research, and that, in importance, research is by far the greatest. If this be true, then it would seem that if the field of corrective therapy is to advance, it must accept responsibility for these three major functions.

The responsibilities inherent in the first two of these functions are readily recognized; and from a brief evaluation, it would appear that we are at least adequately meeting our treatment and teaching responsibilities.

But, what about the third function of the triad? Do we recognize the function of research as being a responsibility of at least equal importance to that of the first two? Do we appreciate the truth of the statement that the advancement of any new field depends upon a parallel development of treatment, teaching, and research?

Apparently we, as an organization, do recognize the need and responsibility for research. When our Association was organized in December of 1946, the office of Publications and Research was established; and in 1949 a Chairman was appointed to head a Research Committee. After the Milwaukee meeting last year, our officers, recognizing the continuing need for research, recommended that the corrective therapy section of each hospital become responsible for the

preparation of one major paper a year relating directly or indirectly to their discipline. Finally, last month in Washington, Dr. A. Ray Dawson, Chairman of the Research Committee, presented a committee report outlining the organization structure of a Research Committee to aid and encourage research among our members. This report was accepted unanimously.

It is the responsibility of the corrective therapist, more than that of anyone else, to carry on research, because through research, the therapist utilizes the great store of clinical material available to him to make positive and important contributions to the patient and to his profession.

Specifically then, what contributions can the corrective therapist make through research to the patient? Since treatment by the corrective therapist is determinedly patient-centered, the patient ultimately becomes the chief recipient of all clinical research. He profits directly from the use of new or improved techniques and procedures; and since he is often an integral part of the research, he becomes further aware of our deep interest in him and reacts with increased confidence in us and in our techniques. Consequently, we are better able to contribute to the attainment of maximal results in the rehabilitation of the patient through research.

Research in the field of corrective therapy contributes much to our profession. First of all, let us be reminded that, though we have come a long way in justifying the existence of corrective therapy, there are still many who do not recognize its place and usefulness. This indicates a great need for extensive orientation to the value of our program; for showing scientific proof of the validity of the claims we make for it. We must show, through research, that our approach and our techniques are making the unique contribution which we claim for them.

Secondly, research by the corrective therapist can provide valuable articles for our Journal. We, who work at the hospital level, have an excellent opportunity to supply technical and professional information to our fellow therapists in schools and colleges. One of the best ways of advancing knowledge in our field and of improving techniques is by making the results of our research available to other corrective therapists.

Furthermore, research in corrective therapy aids in defining the functions of our discipline. It helps to establish the relationship which corrective therapy bears to other disciplines. Research points up our sphere of activity, it aids in explaining the rationale of our profession, it develops clear justifications for programs and techniques, and makes clearer our area of responsibility.

In considering our responsibility to corrective therapy, it is important that we remember that the ability to add to human knowledge in a given field through investigative effort distinguishes a profession from a vocation or a craft skill.

So, in order to meet our distinct responsibility for carrying on research and to insure the parallel development of the three necessary functions of the evaluation triad—treatment, teaching, and research—let us resolve to carry on research continuously. Let us take up the challenge of our officers and complete one major paper each year. In so doing, we will be making invaluable contributions to the patient and to the progress of our discipline.

Paul F. Fleer, M.A.

*The world is full of willing people—some willing to work, and others willing to let them.*

*Happiness is that peculiar sensation you acquire when you are too busy to be miserable.*

*In learning the Golden Rule, too many people never get beyond, "Do unto others . . ."*

*Opportunity seldom calls on people who aren't worth a rap and can't stand a knock.*

*If you have built castles in the air, your work need not be lost—now put the foundation under them.*

*No man ever climbed the ladder of success with his hands in his pockets.*

# RESEARCH

(Editor's Note: This page will be devoted to keeping our readers informed on contemporary research in allied fields of rehabilitation, and to stimulating research in CORRECTIVE THERAPY. We are fortunate to have as Chairman of the RESEARCH COMMITTEE, ALONZO RAY DAWSON, M.D., Chief, Physical Medicine and Rehabilitation Service, V. A. Hospital, Richmond, Virginia. Acting as Secretary of the Committee will be Sam Buchart, Chief, Corrective Therapy Section at the same facility.

A copy of the committee report is published below to acquaint the membership with the plans to be followed in carrying out an effective program of research. As indicated in the report, clinical research will be used extensively. There is much of this type of research being carried on throughout the various hospitals at present. It should be reported, no matter what the status of findings. Publication of the progress of your study; the type and results to date will take precedence over the reporting of research in other fields. Send your report in a fifty (50) word statement to the Secretary in time for him to edit to meet the deadline of the 15th of October; December; February; April; June and August to make this column up to date, informative and professionally stimulating.

The Research Committee will welcome any suggestions from the membership regarding areas of research not included in the report.)

## RESEARCH COMMITTEE REPORT*

All scientific developments are based upon research and in medicine to the basic research must be added the clinical applicaton of this research, therefore, it is imperative to the growth of the Corrective Therapists that this therapy now develop a research program which will enable it to more effectively carry out its clinical responsibility. With the above premise as a foundation on which to build a research program, we propose the following:

(1) That we proceed primarily with clinical research at this stage of growth of this therapy and that we shall encourage basic research but give greater emphasis upon the clinical side, feeling that basic research will come nto more prominence in the future.

(2) That a research committee should consist of a Chairman, a Secretary, and seven (more or less) committee members who shall be responsible to the committee for certain areas of endeavor. It has been felt that these subdivisions should, at the present time, emphasize clinical subdivisions of the normal areas of therapeutic interests of the Corrective Therapists. We propose that these subdivisions be as follows: (1) Neurologic; (2) Psychiatric; (3) Orthopedic; (4) General Medical; (5) General Surgical; (6) Basic Research; (7) Personality Studies.

It is recommended that the committeeman in charge of each of these committees select persons interested in the particular field of endeavor—for instance, in the large field of Neurologic Research, it is thought that the committeeman in charge of this area would perhaps select someone well-versed in Paraplegia to head up Paraplegia Research; someone well-versed in Cerebral Palsy would be responsible for that area, and the like. In thinking along those lines we feel that some such subdivisions as follows would be indicated for each of the areas. It is not thought that a person be selected for each subdivision but that a subcommittee be responsible for one or more areas of research.

A. Areas for research under the *"Neurologic Division"*

1. Multiple sclerosis
2. Other sclerotic conditions
3. Peripheral nerve
4. Paraplegia—Quadriplegia
5. Infections of the central nervous system
6. Cerebral palsy
7. Muscular dystrophy
8. Other neurologic conditions

B. Areas for research under the *"Orthopedic Division"*

1. Fractures
2. Amputations (here or under "General Surgical Division")
3. Skeletal muscular back pain, etc.)
4. Bracing
5. Operative correction
6. Other orthopedic conditions

C. Areas for research under the *"Psychiatric Division"*

1. The psychoses
2. The neuroses
3. Motivation
4. Orientation
5. Socialization
6. Aggression
7. Anxieties
8. Other psychiatric conditions

D. Areas for research under the *"General Medical Division"*

1. Rheumatology
2. Cardiac
3. Diabetes
4. Other conditions not covered above.

E. Areas for research under the *"General Surgical Division"*

1. Early ambulation
2. Vascular surgery
3. Amputations (here or under "Orthopedic Division")
4. Conditions not covered above.

F. Areas for research under the *"Basic Research Division"*

1. Physiology
2. Kinesiology
3. Other

G. Areas for research under the *"Personality Research Division"*

1. Motivation
2. Retardation
3. Factors that go to make up personality.

It is obvious that many of these areas overlap. Instead of these overlapping areas being deterent it seems that it would serve to stimulate more people to become interested in the final result—good treatment of the patient.

*Presented at the Seventh Annual Conference of the Association for Physical and Mental Rehabilitation, Washington, D. C. July 20-24, 1953.

# Book Reviews

PROLONGED ILLNESS: Proceedings of Autumn Meeting, 1951, Publication No. 83, 44 pp., $1.; Proceedings of Second Regional Meeting, 1952, Publication No. 93, 40 pp., $1. Research Council for Economic Security, 111 W. Jackson Blvd., Chicago 4, Illinois.

Prolonged illness presents an extremely important problem, not only for the individual concerned, but also for the family, the field of medicine, industry, the community and the nation. Some of the questions that need to be answered in regards to prolonged illness are: How frequently does this occur? Are there means of preventing these conditions? How extensive is the cost? How is the cost being met? Can medical science help alleviate or rehabilitate the afflicted?

The Research Council for Economic Security, with the aid of the doctors, labor, industry, the community and the government, are in the process of investigating and accumulating the necessary facts to help answer these and many more questions brought to their attention through their regional meetings.

The named two booklets contain the proceedings of these meetings with the discussion, outline and limitations of the study on prolonged illness. The first booklet includes an informative address by Senator Paul H. Douglas and the second, a stimulating presentation by Dr. Paul R. Magnuson.

Personnel in the field of rehabilitation should become well acquainted with the Research Council and its work, especially in the areas related to their profession.

HJB

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Nathan W. Shock, editor, PROBLEM OF AGING, Transactions of the Fourteenth Conference, New York; Josiah Macy, Jr. Foundation, 1952. 188 pp. $3.00.

It has been estimated that by 1965 almost 15% of our population will be over 60. Certain implications are obvious: geriatrics will afford one of the biggest areas for service by the Corrective Therapist, and the foreseeing ones will start preparing for this situation now. The Macy Foundation is making a notable attack on the problem of senescence by bringing representatives from the different scientific disciplines together for informal discussions. The problem of communication between the disciplines is formidable; one conferee points out that because of the different emphasis placed on the problems of aging, the physician, sociologist, psychologist and biologist fail to understand each other. Even basic terms such as "aging" and "senescence" are used with no agreement as to their meaning. While full recognition is accorded the difficulties involved, it is generally agreed that the aged must be "given the opportunity to remain as long as possible an ordinary member of society." The economic facets of the problem are considered in some detail and a section is devoted to medical services. The Conference offers no quick and easy solutions; in fact it stresses the difficulties in the way of solutions. Corrective Therapists interested in the broader aspects of their profession will find the report contains a great deal of stimulating and thought provoking material.

PJR

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Heinz von Foerster, editor, CYBERNETICS: CIRCULAR CAUSAL AND FEEDBACK MECHANISMS IN BIOLOGICAL AND SOCIAL SYSTEMS. Transactions of the Ninth Conerence. New York: The Josiah Macy, Jr. Foundation, 1953. $4.00. 184 pp.

Norbert Wiener introduced the word *Cybernetics* to indicate the study of messages and the communication facilities over which they are transmitted. It is his argument that the operation of the living individual and of the complex electronic machines are precisely parallel; the study of either will clarify our understanding of the operation of the other. The volume in question is "the partial account of conversations within a group" of some of the finest minds in the country concerning "the problems of communication and of self-integrating mechanisms." It should be obvious that such an interchange is often extremely technical; indeed, the conferees themselves do not hesitate to arise at intervals and state that they do not understand what has been presented. But for those who will persevere through the difficult terrain involved, there are bonanzas to be discovered. Gerard presents certain neurological findings which cast grave doubt upon Locke's philosophical concept of the *tabula rasa*. Kubie raises some very thought provoking questions in his enquiries concerning just what we mean by "strong" and "weak" emotions and the implications for psychiatry in the use of such terms. Kluver brings up the question of whether the nervous systems is semi-liquid and the dendrites move. Other speakers consider the role of humor in human communication, whether it is theoretically possible to design a mechanical chess player which could outplay its designer, the possible number of Boolean functions, and like questions. This book is not for those who have not had graduate work in the sciences, but those who have an adequate background and are willing to do the difficult reading required will find it rewarding.

PJR

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Peter V. Karpovich, ADVENTURES IN ARTIFICIAL RESPIRATION, New York: Association Press, 1953. 303 pp. $7.50.

Only rarely can a reviewer say of a book, "Here is the definitive work on the subject." This is one of those occasions. Here is the complete story of artificial respiration, from Biblical days to 1953. History, physiology, techniques, teaching methods and evaluation are covered. In all, 117 methods are examined, as a result of which Dr. Karpovich concludes that the Nielsen method is the best. Bibliographic citations are extensive. The text is presented clearly and simply, and is aided by numerous pictures and charts. Further physiological studies may clarify some of the points which are still obscure, but it is unlikely that any extensive revision of the material will ever be required. The book is a "must" for anyone teaching resuscitation, especially those engaged in swimming and water safety training. It makes fascinating reading for any one interested in the problems of respiration in general. *Adventures in Artificial Respiration* should be in the professional library of every physical educator, recreation leader, and Red Cross instructor.

PJR

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Packard Thurber *et al.*, "EVALUATION OF INDUSTRIAL DISABILITY," New York: Oxford University Press, 1950. $4.25. 89 pp.

The determination of compensation for industrial disabilities is usually based on the degree of loss of function suffered. Because measurements of restrictions of joint movements were calculated by several different methods, with much resultant confusion, the Council of the California Medical Association and the Industrial Accident Commission of the State of California authorized the preparation of a standard method to measure the range of joint movements.

Very nearly one-half of the book is devoted to pictures illustrating the recommended techniques, with accompanying written instructions appearing on the opposite page. The photographs are distinct and well posed; the text is as free of technical terminology as is possible. With the exception of protractors for measuring angles, almost no equipment is required under this system. Aided by this book even a person with no medical training should be able to do a satisfactory job of obtaining the desired data. It is recommended as a handy guide for anyone having need for this sort of information.

PJR

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(Editor's Note: As announced in the Aug.-Sept. issue, Book Reviews and Abstracts From Other Journals will be selected and edited by:

PHILLIP J. RASCH, 567 Erskine Dr.,
Pacific Palisades, Calif.

Many more readers are needed for this column. Anyone interested in contributing should submit copy to Mr. Rasch by the first of Aug., Oct., Feb., Apr., and June.)

*There are three ingredients in the good life: learning, earning and yearning.*

*—Christopher Morley*

# Chapter Activities

## TEXAS CHAPTER

The Texas Chapter of the Association for Physical and Mental Rehabilitation met at the McCloskey V.A. Center, Temple, Texas on July 11, 1953. The program for the morning session included the following papers: "Effects of Post-Operative Early Ambulation" by *Dr. John J. Humm,* Assistant Chief, Surgical Service, McCloskey V.A. Center; "Corrective Therapy in Treating of Chronic NP Patients" by *Dr. Herbert A. Schubert,* Chief NP Service, McCloskey V.A. Center; "Early Local Treatment of Snake Bite" by *Dr. Rollin S. Filmore,* Chief PMR Service, McCloskey V.A. Center. *Wilburn Curnutt,* Corrective Therapist, VAH, Waco, Texas presented a case history of an NP patient. *George D. Allen,* Chief Corrective Therapy, VAH, McKinney, Texas presented a case history of a poliomyelitis patient.

The afternoon session was devoted to business and the election of officers. The following officers were elected:

President—*Major H. J. Rockstroh,* Brooke Army Medical Center San Antonio, Texas.

Vice-president—*John Boyce Nall,* V.A. Center, Temple, Texas.

Secretary-Treasurer—*George D. Allen,* VAH, McKinney, Texas.

The next meeting of the Texas Chapter is scheduled to be held at the Brooke Medical Center, San Antonio, Texas. Following the business meeting the group went on a conducted tour of the Physical Medicine Rehabilitation Service facilities at the McCloskey V.A. Center. A session of swimming and golf on the McCloskey grounds completed a very successful meeting which had been arranged for by John Boyce Nall and his staff.

## SOUTHERN CALIFORNIA CHAPTER REPORTS

On May 20, 1953, the Chapter held a professional meeting at the Veterans Administration Hospital, Long Beach, California, and presented; PARAPLEGIA: FROM INJURY TO EMPLOYMENT. The meeting was well attended. The Chapter President, BURR S. ZACHARY and the program Chairmen, JAMES DUNKELBERG and GEORGE V. DEVINS are to be congratulated for arranging such a comprehensive program.

PROGRAM

WELCOME ..... Dr. E. V. Edwards, Manager, Veterans Administration Hospital, Long Beach

AN INTRODUCTION TO PARAPLEGIA
Dr. Ernest Bors, Chief of Paraplegia Service, Long Beach Veterans Administration Hospital

PANEL

MODERATOR ..... Mr. Aldo S. Romiti, B.S., Executive Assistant, Physical Medicine and Rehabilitation Service Long Beach Veterans Administration Hospital.

PANEL MEMBERS:

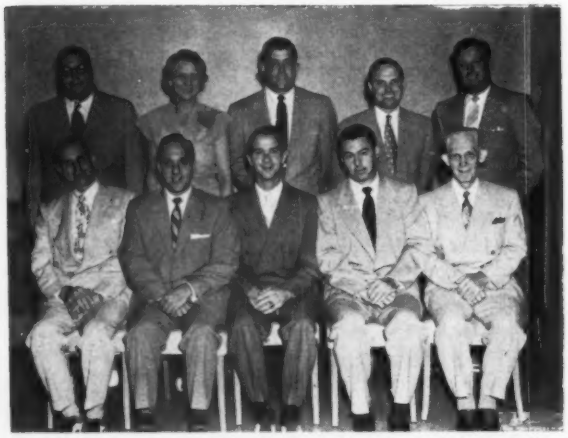
Estin A. Comarr, M.D., Paraplegia Service, VA Hospital, Long Beach.
Roy H. Nyquist, M.D., Paraplegia Service, VA Hospital, Long Beach.
Morse P. Manson, Ph.D., Chief, Vocational Counseling Service, VA Hospital, Long Beach.
George McArthur, California State Employment Service Representative.
C. T. Storment, Ph.D., Assistant Chief, Clinical Psychology, VA Hospital, Long Beach.
Arthur MacFail, California State Vocational Rehabilitation Officer.
Thomas E. Gafford, B.A., Social Service, VA Hospital, Long Beach.
Margaret Allen, R.N., Nursing Service, VA Hospital, Long Beach.
Mary Scales, Chief of Recreation, VA Hospital, Long Beach.
Walter Crowe, M.A., Department of Physical Education, Long Beach State College.
George Hohman, Ph.D., Clinical Psychologist, U.C.L.A.

PARAPLEGIA IN EMPLOYMENT ..... Mr. Justin Johnston, Assistant to Employment Manager, Hughes Aircraft.

PROGRAM SUMMARY ..... James Scully, Patient

# News and Comments

## ASSOCIATION OFFICERS 1953-54



*Front Row,* l. to r. Dr. John E. Davis, founder of the association; Louis F. Mantovano, President-Elect; Harold M. Robinson, President; Thomas J. Fleming, Past President and Everett M. Sanders, Director of Publications.

*Second Row,* l. to r. Stanley H. Wertz, Secretary; Mrs. Eleanor Stone, Treasurer; Leslie H. Root, Frank S. Deyoe, and Robert E. Shelton, Vice Presidents.

The annual election of officers of the Association for Physical and Mental Rehabilitation was held at the Hotel Mayflower, Washington, D. C., on June 20 when special meetings of the Representative and General Assemblies were held.

Mr. Louis F. Mantovano of Rockville Centre, Long Island was rewarded for his long service to the association by being elected President of the organization for 1954-55. Mr. Mantovano is a graduate of New York University with a Master's degree in Health and Physical Education. He served as a physical reconditioning officer in the Army during World War II and entered into the V.A. rehabilitation program shortly after being discharged from service. He was Chief of Corrective Therapy at the V.A.H. Manhattan Beach, N.Y. until that hospital's deactivation in 1949 and since that time he has occupied a similar position at the beautiful Fort Hamilton Hospital in Brooklyn. Mr. Mantovano has been extremely active in association affairs for several years, having served three terms of office as Treasurer (1949-50; 1951-52; 1952-53) and acted as Chairman of several important committees including Educational Qualifications and Liaison. As President-Elect, Mr. Mantovano will occupy a prominent place on the Executive Board this year and probably will be appointed Chairman of Professional Committees.

Mrs. Eleanor Stone of Milburn, N. J., a teacher of corrective physical education in the New York City school system, is this year's Treasurer. Mrs. Stone is the author of "Corrective Therapy for the Handicapped Child," a textbook, and has contributed extensively to physical education publications. She has served on several committees of the Association for Health, Physical Education, and Recreation and during the past year, served on several committees of the Association for Health, tion. Mrs. Stone was Corresponding Secretary of the Eastern States Chapter in 1952 and was elected President of the chapter in 1953.

Mr. Stanley H. Wertz of Memphis, Tenn., was re-elected to the office of Secretary, a position he has held since 1952 when he was appointed to fill the unexpired term of Major Louis Frazier. Mr. Wertz, a specialist in hydro-gymnastics, received extensive training at the Kabat-Kaiser Institute prior to his entrance into corrective therapy in the Veterans Administration. He has served during the past two years as Associate Editor of the Journal.

Mr. Leslie H. Root of Milwaukee, Wisc., newly elected Vice President is Chief, Corrective Therapy, at the Wood (Wisc.) V.A. Center. Mr. Root was a member of the Representative Assembly last year and also served as chairman of the Membership Committee which compiled an outstanding record. He has served one previous term of office as Vice-President in 1951-52 when he held the position under President Leo Berner.

Mr. Frank S. Deyoe of Saxonville, Mass., Chief, Corrective Therapy, Framingham and President of the New England Chapter, was re-elected Vice President. A graduate of Springfield College, he is co-author (with Kenneth Dening and Alfred Ellison) of the text, "Ambulation—Physical Reconditioning For Crutch Walkers." Mr. Deyoe served as chairman of the Constitution Committee last year and was largely responsible for an effective revision of a document which had out-lived its usefulness.

Mr. Robert E. Shelton of Urbana, Ill., was also re-elected Vice-President. Mr. Shelton is Associate Professor of Health and Physical Education at the University of Illinois and specializes in the training and preparation of corrective therapists for professional careers. He is very active in the Association for Health, Physical Education and Recreation and is at present Chairman of the Therapeutic Section of that organization. Mr. Shelton performed valuable service to our association last year when he co-chairmaned the Education Committee with Mr. Karl Klein.

Mr. Everett M. Sanders of Memphis, Tenn., is starting his third year as Director of Publications. A graduate of the Posse-Nissen School, Univ. of Pittsburg, and Teachers College, Columbia Univ., Mr. Sanders has over forty years of experience in the field of Physical Education, having taught at Harvard and the Indiana, Pa. State Teachers College prior to entering Corrective Therapy shortly after the termination of World War II. Mr. Sanders, one of the pioneers in the development of functional activities for paraplegics, is at present Chief, Corrective Therapy, V.A.M.T.G. in Memphis.

Mr. Thomas J. Fleming of Montrose, N. Y., Past President, will continue to serve on the Executive Board for another year as well as to act as Secretary of the Certtification Board. Mr. Fleming was formerly Chief, Corrective Therapy, at Coatesville, Pa., before transferring in the same capacity to the Montrose hospital. A graduate of Manhattan College and Teachers College, Columbia Univ., he plans to continue his studies for the Ph.D. degree at Columbia during the coming year.

Serving as President of the association this year will be Mr. Harold M. Robinson, Chief, Corrective Therapy, Downey, Ill. Mr. Robinson is a graduate of the East Stroudburg (Pa.) State Teachers College and served during World War II as a physical reconditioning officer in the U. S. Army. He entered the field of Corrective Therapy in the Veterans Administration immediately after the war and won rapid promotion to the position of Chief, at the Roanoke, V.A.H., a post he held until Aug. 1952 when he transferred to Downey. Mr. Robinson was one of the original members of the Association for Physical and Mental Rehabilitation and has served on the Representative Assembly, acted as Chairman of the Chapter Committee (1952) and Chairman and Coordinator of Professional Committees (1953). Mr. Robinson was President of the Middle Atlantic Chapter from March, 1951 to August, 1952.

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*"Grant that I may not criticize my neighbor until I have walked a mile in his moccasins."* —*An Indian Prayer*

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*Fear less, hope more; eat less, chew more; whine less, breathe more; talk less, say more; hate less, love more, and all good things are yours.* —*Lord Fisher*

## REHABILITATION PRIZE GOES TO V.A. OFFICER

The Association For Physical and Mental Rehabilitation presented its John Eisele Davis award to Dr. Alvin B. C. Knudson, Chief of the Physical Medicine and Rehabilitation Division of the Veterans Administration in Washington, D. C.

A member of the medical staff of George Washington University Hospital in Washington and numerous medical and professional societies, Dr. Knudson was chosen for the award for having pioneered "in developing philosophies of rehabilitation in relation to advancing concepts in the fields of science and medicine."

Dr. Knudson, a man who seldom knows when to "call it a day" has been untiring in his efforts to coordinate into an effective team the ancillary therapies which are making history in the treatment of the handicapped and disabled. Our Association salutes a fine gentleman, a real friend and a stimulating and competent leader.

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## HIGHLIGHTS OF THE BUSINESS MEETINGS AT THE CONVENTION

The meeting of the Board of Governors of the Association for Physical and Mental Rehabilitation was called to order by President Tom Fleming at 11:15 a.m. on July 19, 1953 at the Hotel Mayflower, Washington, D. C. Thus began two days of meetings attended by the officers and area representatives during which much important business was transacted.

Mr. Louis F. Mantovano, treasurer, announced that the association was now incorporated in the state of New York as a non-profit organization and that the charter and corporate seal had been received. He also stated that a national headquarters had been established on a small scale in the same city.

Mr. Wertz disclosed in his report as secretary that the organization had sustained the greatest growth in its history during the past year. During that time the active membership had shown a 17% increase while the associate membership had more than tripled.

Vice president Frank S. Deyoe presented the newly revised constitution for ratification. It was given tentative approval by the group with the final draft to be presented at a later date when the latest amendments will be included. Mr. Deyoe was given a rising vote of thanks for his excellent piece of work during the year.

It was decided by the group that the national newsletter, edited by Roger Wessel, would be sponsored financially by the association during the coming year in the event that the present sponsor did not continue. It will be published alternately with the Journal.

A code of ethics was adopted by the association on a two-year trial basis. The code was submitted by Mr. Kenneth Dening. Mimeographed copies will be sent out to the membership.

Upon the recommendation of the secretary and the membership chairman, dues of active members were raised to ten dollars a year effective September 1, 1953. This proposal was voted unanimously by the group in view of the growth and rising expenses of the organization.

In close balloting Boston, Mass. was chosen over Chicago for the 1955 convention site. Frank S. Deyoe extended the invitation and is scheduled to act as chairman of the convention.

The names of Louis F. Mantovano, Les Root, Frank S. Deyoe, and Edward Friedman were placed in nomination for president elect. After extremely closed balloting Lou Mantovano was elected. Mr. Everett M. Sanders nominated Roger Wessel for editor elect of the Journal. Mr. Leo Berner was then nominated by Art Landy. Roger Wessel was elected to take over the editorship in 1954.

Mr. Mantovano proposed that the initial fee for certification be ten dollars and the renewal fee five dollars a year. This was adopted unanimously. Tom Fleming and Roger Wessel announced that they were about ready to put this plan into effect with all active members at the present time being eligible.

At the general membership meeting on the evening of July 20 the election of officers was held. Mr. Stanley H. Wertz was re-elected to the office of secretary and Mrs. Eleanor Stone was named treasurer. The names of Edward Friedman, George Allen, Paul Bell, Rudolph Jahn, Paul Eberly, Hyman Wettstein, Frank Deyoe, Les Root, and Robert Shelton were placed in nomination for the posts as vice presidents. Root, Shelton, and Deyoe were elected after a close ballot.

SHW

## DEMAND FOR EXERCISE THERAPIST INCREASING

More vacanices exist for Exercise Therapists, grade GS-5, $3410.00 per annum, at Fort Meade, South Dakota; Perry Point, Maryland; Memphis, Tennessee; Salt Lake City, Utah (Neurosychiatric Hospital); Chillicothe, Ohio; Tomah, Wisconsin; Augusta, Georgia; Coatesville, Pennsylvania; Los Angeles, California; Bath, Maine and Cleveland, Ohio.

Applicants must have successfully completed the requirements for graduation from a school of Physical Education, or an accredited college or university, or teacher-training institution with a major in physical education, or study which included or was supplemented by at least 24 hours toward such a major.

At least 20 of the 24 semester hours must be in such courses as corrective or remedial exercise, physiology of exercise, principles of physical education, techniques of sports and games, hygiene, first aid, methods or principles of teaching physical education, therapeutics, sports for the physically handicapped, mental hygiene in physical education, physiology, kinesiology, human anatomy, psychology, or pathology. Four semester hours may be in such basic related courses as bacteriology, physics, chemistry or biology.

In addition, this education must have included or be supplemented by at least one course in clinical practice in therapeutic exercise in which patients participate upon prescription of a doctor of medicine. (Six months of such experience may be presented in lieu of this course.)

## "RICE-PADDIE LEG" DEVISED FOR KOREAN REHABILITATION CENTER

The American-Korean Foundation, headed by Dr. Milton S. Eisenhower, has announced that the first model of a new artificial leg especially designed for the use of Korean amputees has been manufactured and will be among a shipment of fifty such prosthetic devices to be shipped to the newly-established Korean Rehabilitation Center at Tongnae, near Pusan. The "rice-paddie leg," so-called because of its adaptability to the rough terrain and rice fields of Korea, was developed at the Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center by William Tausberg, director of prosthetics, at the suggestion of Dr. Howard A. Rusk, director of the Institute, who recently returned from Korea after surveying the rehabilitation needs of that country for the American-Korean Foundation. The new prosthesis uses aluminum tube stock, is light-weight, and is easy to manipulate. It is being produced by Abilities, Inc., a factory which itself is staffed primarily by amputees and other handicapped workers, and will be manufactured at a cost of $10 to $20 as compared with the $300 to $400 required to purchase a conventional prosthesis.

Three specialists in amputee-training will be sent to Korea in the near future to help staff a 900-bed hospital and rehabilitation center which will be dedicated primarily to serving the needs of the 15,000 civilian amputees in hospitals and dispensaries many of whom are unable to return to their homes because of the lack of suitable prostheses.

## WORLD VETERANS FEDERATION

In two years this group has come to be recognized as one of the largest and most influential non-governmental organizations in the world today. It has won the right to speak for 16 million veterans in 20 nations. Its members have pledged themselves:

1) To support policies which serve the cause of world peace based on freedom and independence;
2) To support the United Nations and to implement the Declaration of Human Rights;
3) To strengthen the bonds of friendship among veterans throughout the world, despite national, racial or religious differences;
4) *To develop an international program of rehabilitation for the disabled, which will result in raising the standards of medical treatment and vocational training for millions of physically handicapped men, women and children;*
5) To preserve the sacred memory of the war dead.

Veterans organizations from six nations met in Paris November 27, 1950. Belgium, France, Italy, Turkey, Yugoslavia, and the United States, became charter members as a result of this meeting called by M. Albert Morel, wounded veteran of World War I and a Resistance Leader of World War II. The Netherlands and Greece asked to be recorded as members, even though they had no official delegates.

Three general assemblies have been held, at Paris, Belgrade and London. At the London conference observers and delegates from 29 countries were present.

In March 1953 Egypt became the 20th member nation.

Their rehabilitation program is placing emphasis on *developing among veterans generally, a feeling of responsibility towards this problem and of supporting active contributions to national rehabilitation programs rather than concentrating upon demands for higher pensions.*

This organization cooperates closely with United Nations specialized agencies in this field and with other international organizations including the World Health Organization, the International Labor Office, the World Council for the Blind, the International Society for the Blind, and the International Society for the Welfare of Cripples.

The achievements of this young organization are to date: 1) A two weeks training course at Queen Mary's Hospital, Rochampton, England, attended by surgeons, limb-fitters and technicians from eight countries. A Traveling Exhibition containing examples of the latest types of prosthetic appliances from France, Germany, Great Britain, Italy and the United States, will soon be on tour; 2) Direct Aid is being sent through CARE eight standard types of packages containing Braille writers, Braille watches, loiding wheel chairs and clothing; 3) Special equipment has been supplied to a new Prosthetic Center in Belgrade and to a hospital for war disabled in Athens where World Veterans Federation initiated a rehabilitation program for paraplegics. Supplies have gone to a new Rehabilitation Center near Tel Aviv, Israel and to Finland and France; 4) A rehabilitation library now exists at headquarters in Paris where material is being compiled for surveys of employment services. A film library is being assembled.

These are but a few of the activities sponsored by the W.V.F. This organization should develop into a powerful force in the restoration of the disabled and eventually become a power in promoting Peace and Good Will.

Anyone wishing more information about the World Veterans Federation should address the Secretary General, Mr. Elliott H. Newcomb, Carnegie Building, 345 East 46th Street, New York City.

## RX FOR THE DISABLED HOUSEWIFE

This 16 page booklet containing 15 illustrations is distributed by The Institute of Physical Medicine and Rehabilitation, New York University—Bellevue Medical Center, 400 East 34th St. New York 16, New York, is replete with practical suggestions. It is free to any who care to send for it. It contains the following statistics:

10,000,000 handicapped women in our nation
1,875,000 women with arthritis
4,500,000 women with cardiovascular disease
175,000 women with tuberculosis
800,000 women with orthopedic impairments
650,000 women with hemiplegia

"The principles of industrial management applied to the jobs of these homemakers in running their homes can offer tangi-

ble help on 'how to live within the limits of their disabilities but to the hilt of their capabilities.' Such help can provide a therapeutic program to supplement the drugs they have taken and the surgery they have undergone and help them to complete the cycle of returning to their normal roles in their homes."

The practical suggestions in this booklet are "the result of the Disabled Homemaker's Research Fund (established by a number of the Nation's Public Utility Companies) and the National Foundation For Infantile Paralysis, which is conducting a study on Self Help Devices for the Handicapped."

## OPERATION KNOXVILLE

Mr. George R. Dempster, mayor of Knoxville, Tenn., gave a radio address over a local station on the evening of February 16, 1953 on the theme O. K., — just a common colloqialism to many people, but to residents of Knoxville it has a significant meaning, — that of Operation Knoxville, a move on the part of the people of that city to extend a hand to the handicapped.

Mr. Dempster cited the cases of many famous people who had overcome their handicaps to make a place for themselves in society. He mentioned the names of Helen Keller, Franklin D. Roosevelt, Thomas Edison and many others. He stated that in his own private business he had had as many as 59 handicapped people working for him at one time. None had ever been involved in an accident affecting himself or his fellow workers and all had proved themselves as assets to his organization. He stated that this was sufficient evidence to him that these people were not a poor risk and that restrictions should be removed by other organizations against the hiring of these individuals.

More and more cities and municipalities are awakening to their responsibility to the handicapped. Only recently Memphis, Tennessee has started its own "Obligation Memphis," a plan similar to that of Knoxville. Citizens are beginning to realize that most of these people are not looking for charity, but for a chance to help themselves.

SHW

## DR. TURNER APPOINTED

Dr. Edward L. Turner, dean of the Schol of Medicine at the University of Washington, has been appointed secretary of the A.M.A.'s Council on Medical Education and Hospitals. Dr. Turner will take over his new duties on Oct. 1, replacing Dr. D. G. Anderson who has recently been appointed dean of the School of Medicine at the University of Rochester.

## MEETINGS OF PROFESSIONAL INTEREST

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| Aug. 31 | 31st Annual Conference of the American Congress of Physical Medicine and Rehabilitation, Palmer House, Chicago, Illinois. Walter J. Zeiter, M.D., Chairman, 30 N. Michigan Ave., Chicago, Ill. |
| Sept. 4 | The World Medical Association, Amsterdam, Holland. |
| Sept. 7-12 | The World Congress of the World Confederation for Physical Therapists, London, England. |
| Sept. 9-11 | The American Association of Rehabilitation Therapists, Edgewater Beach Hotel, Chicago, Illinois. |
| Sept. 14-19 | International College of Surgeons, Hotel Waldorf-Astoria, New York City, New York. |
| Oct. 25-28 | The National Rehabilitation Association, Delano Hotel, Miami, Florida. |
| Nov. 9-13 | American Public Health Association, New York City, N. Y. |

# SELECTED BIBLIOGRAPHY FOR CORRECTIVE THERAPISTS: PARAPLEGIC REHABLITATION

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*(To Be Continued)*

## Examinations for Corrective Therapist GS-5/9

A new announcement on CORRECTIVE THERAPIST GS-5 through GS-9 was issued by the U. S. Civil Service Commission on Aug. 18, 1953. This announcement will combine the register now maintained by the Board on EXERCISE THERAPY GS-5 established under announcement No. 299 with the register now to be established under announcement No. 377. Those who filed in the earlier examination need not file under the new. The registers established under Announcement No. 377 will be used for the conversion of indefinite employees to probational status and for the filling of all vacancies in this field in grades GS-5 through GS-9. Since this position is in a great shortage category it is requested that the announcement be brought to the attention of all members of CORRECTIVE THERAPY STAFFS and the notice be given all possible publicity.

Since examining jurisdiction for CORRECTIVE THERAPIST grades GS-5 through GS-9 has been centralized, Standard Forms 59 for non-competitive actions involving CORRECTIVE THERAPIST positions in these grades which would ordinarily have been sent to the Commission's Regional Office for approval of qualifications, should hereafter be forwarded to this Board.

John William Moylneau
Chairman, Central Board
U. S. Civil Service Examiners

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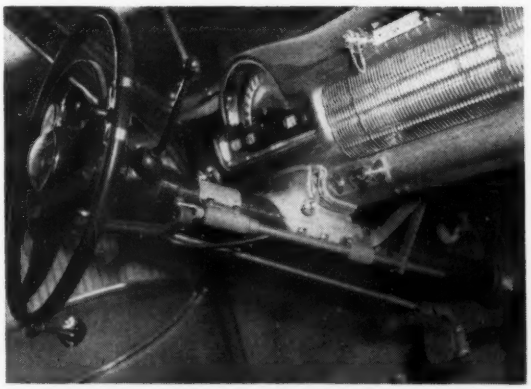

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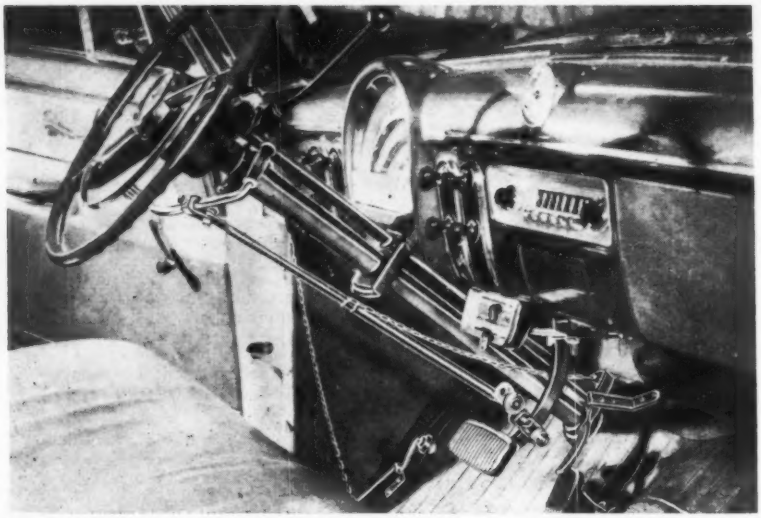

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